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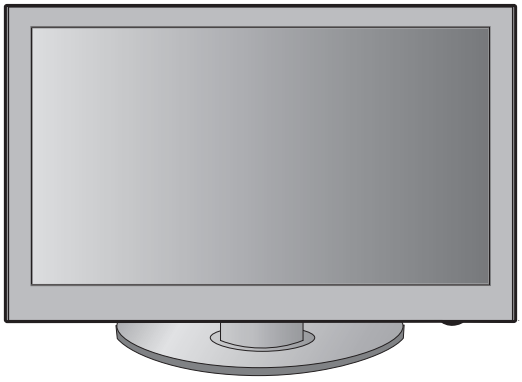
PLASMA TV
SERVICE MANUAL

CHASSIS : PU92C

MODEL : 50PS60 50PS60-UA

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Exploded View.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

An **Isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitary that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the same specified type.

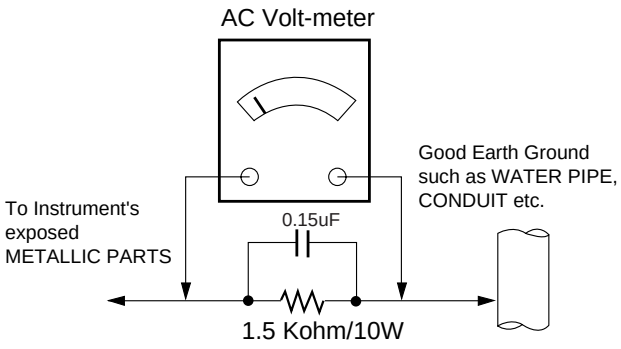
When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Leakage Current Cold Check(Antenna Cold Check)
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on positioin, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.
Do not use a line Isolation Transformer during this check.
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each esposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.
In case any measurement is out of the limits sepcified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



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SPECIFICATIONS

NOTE : Specifications and others are subject to change without notice for improvement.

v Application Range

This spec is applied to the PLASMA TV used PU92A/PU92C Chassis.

Chassis	Model Name	Market	Brand	Remark
	32PQ1DV-UA	NORTH AMERICA	LG	
PU92A	42PQ20-UA 50PQ20-UA 42PQ30-UA 50PQ30-UA 42PQ60-UA 50PQ60-UA			
PU92C	50PS30-UB 50PS60-UA 60PS60-UA			

v Specification

Each part is tested as below without special appointment.

1) Temperature : 25±5°C
2) Relative Humidity: 65±10%
3) Power Voltage: Standard Input voltage (100-240V~, 50/60Hz)
   * Standard Voltage of each product is marked by models.
4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with SBOM.
5) The receiver must be operated for about 20 minutes prior to the adjustment.

v Test Method

1) Performance : LGE TV test method followed.
2) Demanded other specification
   Safety : UL, CSA, IEC specification
   EMC : FCC, ICES, IEC specification

Model	Market	Appliance	Remark
32PQ1DV-UA	NORTH AMERICA	Safety : UL1492, CSA C22.2.No. 1 EMC : FCC Class B, IC Class B	
42PQ20-UA 50PQ20-UA 42PQ30-UA 50PQ30-UA 42PQ60-UA 50PQ60-UA			
50PS30-UB 50PS60-UA 60PS60-UA			

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SPECIFICATIONS

v General Specification

No.	Item	Specification
1	Receiving System	ATSC/64 & 256 QAM/NTSC-M
2	Available Channel	1) VHF : 02 ~ 13 2) UHF : 14 ~ 69 3) DTV : 02 ~ 69 4) CATV : 01 ~ 135 5) CADTV : 01 ~ 135
3	Input Voltage	1) AC 100 ~ 240V 50/60Hz 2) AC 100 ~ 120V 50/60Hz
4	Market	NORTH AMERICA
5	Screen Size	42 inch Wide(1024 X 768) 50 inch Wide(1365 X 768) 60 inch Wide(1365 X 768) 50 inch Wide(1920 X 1080) 60 inch Wide(1920 X 1080)
6	Aspect Ratio	16 : 9
7	Tuning System	FS
8	Module	PDP32F2####(852 X 480) PDP42G2####(1024 X 768) PDP50G2####(1365 X 768) PDP50H3####(1920 X 1080) PDP60H3####(1920 X 1080)
9	Operating Environment	1) Temp : 0 ~ 40deg 2) Humidity : ~80%
10	Storage Environment	1) Temp : -20 ~ 60deg 2) Humidity : 0 ~ 90%

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ADJUSTMENT INSTRUCTIONS

1. Application Range

This spec sheet is applied to all of the “PU92A(HD)” and “PU92C(FHD)” Chassis.

2. Specification

(1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
(2) Adjustment must be done in the correct order.
(3) The adjustment must be performed in the circumstance of 25±5℃ of temperature and 65±10% of relative humidity if there is no specific designation.
(4) The input voltage of the receiver must keep 100~240V, 50/60Hz.
(5) The receiver must be operated for about 5 minutes prior to the adjustment when module is in the circumstance of over 15℃
- In case of keeping module is in the circumstance of 0℃, it should be placed in the circumstance of above 15℃ for 2 hours
- In case of keeping module is in the circumstance of below -20℃, it should be placed in the circumstance of above 15℃ for 3 hours.

1) Press the POWER ON KEY on R/C for adjustment.
2) Press the ADJ KEY on R/C and enter EZ ADJUST. Select “4. WHITE PATTERN” by using D/E(CH +/-) and select “White” by using F/G(VOL +/-)

- Set is activated HEAT run without signal generator in this mode.
- Single color pattern (RED / BLUE / GREEN) of HEAT RUN MODE uses to check panel.

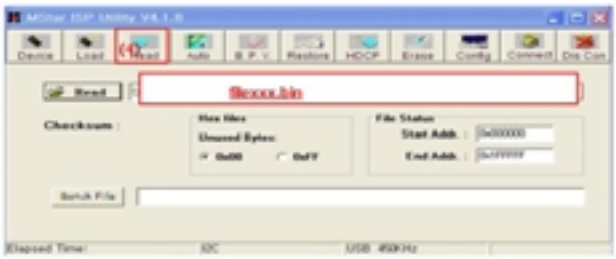
Caution: If you turn on a still screen more than 20 minutes (Especially digital pattern, cross hatch pattern), an after image may be occur in the black level part of the screen.

Caution: Set up “RF mode(noise)” after PCB assembly adjustment.

3. Download

(1) Execute ISP program “Mstar ISP Utility” and then click “Config” tab.
(2) Set as below, and then click “Auto Detect” and check “OK” message If display “Error”, Check connect computer, jig, and set.
(3) Click “Connect” tab. If display “Can’t” , Check connect computer, jig, and set.

(4) Click “Read” tab, and then load download file(XXXX.bin) by clicking “Read”



(5) Click “Auto” tab and set as below
(6) Click “Run”.
(7) After downloading, check “OK” message.

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4. ADC Process

4-1. PC Input ADC

(1) Auto RGB Gain/Offset Adjustment

1) Convert to PC in Input-source
   I2C COMMAND: 0xF4 (SELECT_INPUT) 0x00 0x60 (RGB)
   cf. 0x10(TV), 0x20(AV), 0x40(COMPONENT), 0x60 (RGB), 0x90(HDMI)

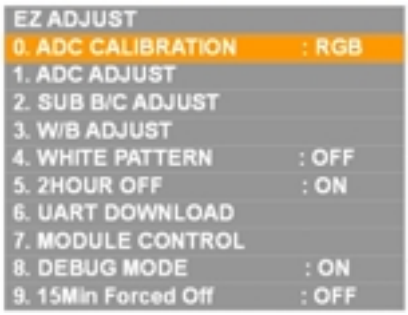
2) Signal equipment displays
   Output Voltage : 700 mVp-p
   Impress Resolution XGA (1024 x 768 @ 60Hz)
   Model, Pattern : Internal pattern of Mstar scaler

3) Adjust by commanding AUTO_COLOR_ADJUST(0xF1) 0x00 0x02 instruction.

(2) Confirmation

1) We confirm whether “0xB6(RGB)” address of EEPROM “0xA2” is “0xAA” or not.
2) If “0xB6(RGB)” address of EEPROM “0xB2” isn’t “0xAA”, we adjust once more
3) We can confirm the ADC values from “0xB0~0xB5 (RGB)” addresses in a page “0xA2”

[Manual ADC process using Service Remocon. After enter Service Mode by pushing “ADJ” key, execute “ADC Adjust” by pushing “G” key at “0. ADC CALIBRATION “.


EZ ADJUST
0. ADC CALIBRATION : RGB
1. ADC ADJUST
2. SUB B/C ADJUST
3. W/B ADJUST
4. WHITE PATTERN : OFF
5. 2HOUR OFF : ON
6. UART DOWNLOAD
7. MODULE CONTROL
8. DEBUG MODE : ON
9. 15Min Forced Off : OFF

4-2. COMPONENT Input ADC

(1) Component Gain/Offset Adjustment

1) Convert to Component in Input-source
   I2C COMMAND : 0xF4 (SELECT_INPUT) 0x00 0x40 (COMPONENT)
   cf. 0x10(TV), 0x20(AV), 0x40(COMPONENT), 0x60 (RGB), 0x90(HDMI)

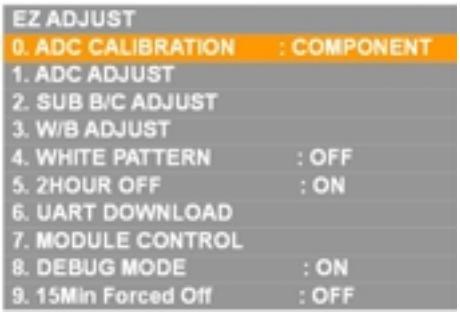
2) Signal equipment displays
   Impress Resolution 480i
   Model, Pattern : Internal pattern of Mstar scaler

3) Adjust by commanding AUTO_COLOR_ADJUST(0xF1) 0x00 0x02 instruction

4) Signal equipment displays
   Impress Resolution 1080i
   Model, Pattern : Internal pattern of Mstar scaler

5) Adjust by commanding AUTO_COLOR_ADJUST(0xF1) 0x00 0x02 instruction

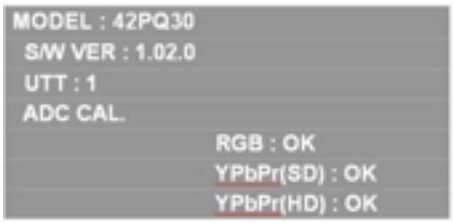
[Manual ADC process using Service Remocon. After enter Service Mode by pushing “ADJ” key, execute “ADC Adjust” by pushing “G” key at “0. ADC CALIBRATION”.


EZ ADJUST
0. ADC CALIBRATION : COMPONENT
1. ADC ADJUST
2. SUB B/C ADJUST
3. W/B ADJUST
4. WHITE PATTERN : OFF
5. 2HOUR OFF : ON
6. UART DOWNLOAD
7. MODULE CONTROL
8. DEBUG MODE : ON
9. 15Min Forced Off : OFF

4-3. Confirmation

(1) We confirm whether “0xBF(480i)/0xC8(1080i)” address of EEPROM “0xA2” is “0xAA” or not.
(2) If “0xBF(480i)/0xC8(1080i)” address of EEPROM “0xA2” isn’t “0xAA”, we adjust once more
(3) We can confirm the ADC values from “0xB9 ~ 0xBE(480i) / 0xC2 ~ (1080i)” addresses in a page “0xA2”

[Manual ADC Confirmation using Service Remocon. After enter Service Mode by pushing “INSTART” key.



5. DDC EDID Write Confirmation

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Caution: Each PCB assembly must be checked by check JIG set. (Because power PCB Assembly damages to PDP Module, especially be careful)

Caution: Set up “RF mode(noise)” before voltage adjustment.

6. POWER PCB Ass’y Voltage Adjustment (Va, Vs voltage Adjustment)

6-1. Test Equipment: D.M.M 1EA

6-2. Connection Diagram for Measuring

Refer to Fig.1, Fig 2, Fig 3

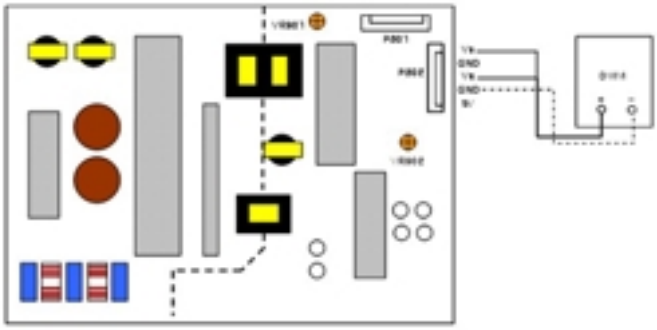
6-3. Adjustment Method

(1) 50” Va Adjustment (refer fig.1)

1) After receiving 100% Full White Pattern, HEAT RUN.
2) Connect + terminal of D.M.M. to Va pin of P802, connect-terminal to GND pin of P802.
3) After turning VR902,voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; ±0.5V)

(2) 50” Vs Adjustment (refer fig.1)

1) Connect + terminal of D.M.M. to Vs pin of P802, connect -terminal to GND pin of P802.
2) After turning VR901, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; ±0.5V)



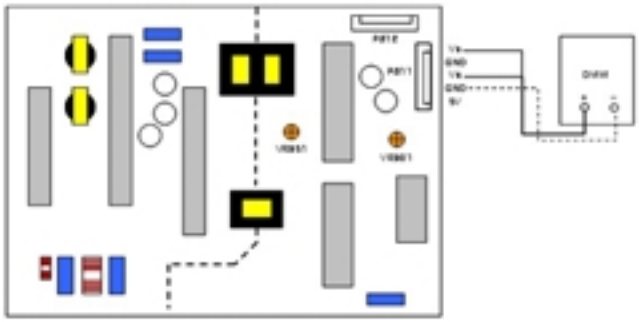
(Fig. 1) 50inch Power PCB Assy Voltage Adjustment

(3) 42” Va Adjustment (refer fig.2)

1) After receiving 100% Full White Pattern, HEAT RUN.
2) Connect + terminal of D.M.M. to Va pin of P811, connect -terminal to GND pin of P811.
3) After turning VR901,voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; ±0.5V)

(4) 42” Vs Adjustment (refer fig.2)

1) Connect + terminal of D. M..M. to Vs pin of P811, connect -terminal to GND pin of P811.
2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; ±0.5V)



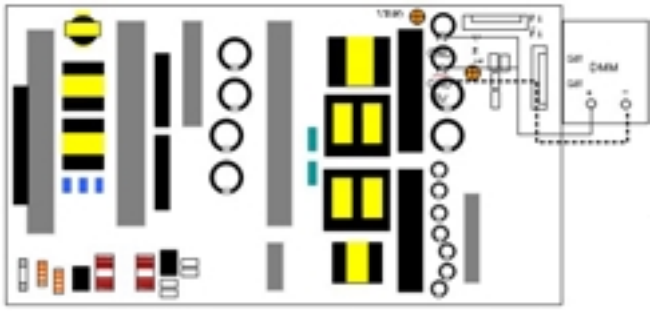
(Fig. 2) 42inch Power PCB Assy Voltage Adjustment

(5) 60” Va Adjustment (refer fig.3)

1) After receiving 100% Full White Pattern, HEAT RUN.
2) Connect + terminal of D.M.M. to Va pin of P11, connect -terminal to GND pin of P11.
3) After turning VR901,voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top (deviation; ±0.5V)

(6) 60” Vs Adjustment (refer fig.3)

1) Connect + terminal of D. M..M. to Vs pin of P11, connect -terminal to GND pin of P11.
2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; ±0.5V)



(Fig. 3) 60inch Power PCB Assy Voltage Adjustment

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7. DDC EDID Write

(MODEL NAME: LG TV(Not necessary))

Caution: Please only check write status in Instart-menu

- EDID download is processed automatically through CPU at initial booting
- PC(for communication through RS-232C), UART baud rate: 115200 bps

7-1. HD EDID DATA

(1) RGB EDID DATA

```
          0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F
-------------------------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x18, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30, 0x40, 0x70,
/* 4 */ 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40,
/* 5 */ 0x58, 0x2C, 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0xFF,
/* 8 */ 0x02, 0x03, 0x04, 0x00, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00,
/* 9 */ 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1C, 0xF1, 0x27, 0x00, 0xA0, 0x51, 0x00, 0x25, 0x30, 0x50, 0x80,
/* a */ 0x37, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* b */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* c */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* d */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* e */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* f */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x31,
```

(2) HDMI-1 EDID DATA

```
          0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F
-------------------------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30, 0x40, 0x70,
/* 4 */ 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40,
/* 5 */ 0x58, 0x2C, 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x10, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xBD,
```

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(3) HDMI-2 EDID DATA

```
        0   1   2   3   4   5   6   7   8   9   A   B   C   D   E   F
-------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30, 0x40, 0x70,
/* 4 */ 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40,
/* 5 */ 0x58, 0x2C, 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x20, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xAD,
```

(4) HDMI-3 EDID DATA

```
        0   1   2   3   4   5   6   7   8   9   A   B   C   D   E   F
-------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30, 0x40, 0x70,
/* 4 */ 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40,
/* 5 */ 0x58, 0x2C, 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x30, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x9D,
```

(5) HDMI-4 EDID DATA

```
        0   1   2   3   4   5   6   7   8   9   A   B   C   D   E   F
-------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30, 0x40, 0x70,
/* 4 */ 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40,
/* 5 */ 0x58, 0x2C, 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x40, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x8D,
```

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7-2. Full-HD EDID DATA

(1) RGB EDID DATA

```
          0   1   2   3   4   5   6   7   8   9   A   B   C   D   E   F
-------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x18, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40, 0x58, 0x2C,
/* 4 */ 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30,
/* 5 */ 0x40, 0x70, 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0xFF,
/* 8 */ 0x02, 0x03, 0x04, 0x00, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00,
/* 9 */ 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1C, 0xF1, 0x27, 0x00, 0xA0, 0x51, 0x00, 0x25, 0x30, 0x50, 0x80,
/* a */ 0x37, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* b */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* c */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* d */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* e */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
/* f */ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x31,
```

(2) HDMI-1 EDID DATA

```
          0   1   2   3   4   5   6   7   8   9   A   B   C   D   E   F
-------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40, 0x58, 0x2C,
/* 4 */ 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30,
/* 5 */ 0x40, 0x70, 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x10, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xBD,
```

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(3) HDMI-2 EDID DATA

```
            0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F
-------------------------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40, 0x58, 0x2C,
/* 4 */ 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30,
/* 5 */ 0x40, 0x70, 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x20, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0xAD,
```

(4) HDMI-3 EDID DATA

```
            0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F
-------------------------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40, 0x58, 0x2C,
/* 4 */ 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30,
/* 5 */ 0x40, 0x70, 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x30, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x9D,
```

(5) HDMI-4 EDID DATA

```
            0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F
-------------------------------------------------------------------------------------------
/* 0 */ 0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x1E, 0x6D, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01,
/* 1 */ 0x00, 0x11, 0x01, 0x03, 0x80, 0x73, 0x41, 0x96, 0x0A, 0xCF, 0x74, 0xA3, 0x57, 0x4C, 0xB0, 0x23,
/* 2 */ 0x09, 0x48, 0x4C, 0xAF, 0xCF, 0x00, 0x31, 0x40, 0x45, 0x40, 0x61, 0x40, 0x81, 0x80, 0xA9, 0x40,
/* 3 */ 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x02, 0x3A, 0x80, 0x18, 0x71, 0x38, 0x2D, 0x40, 0x58, 0x2C,
/* 4 */ 0x45, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x66, 0x21, 0x50, 0xB0, 0x51, 0x00, 0x1B, 0x30,
/* 5 */ 0x40, 0x70, 0x36, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x00, 0x00, 0x00, 0xFD, 0x00, 0x30,
/* 6 */ 0x4B, 0x1F, 0x64, 0x11, 0x00, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x00, 0x00, 0x00, 0xFC,
/* 7 */ 0x00, 0x4C, 0x47, 0x20, 0x54, 0x56, 0x0A, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x20, 0x01, 0x97,
/* 8 */ 0x02, 0x03, 0x1B, 0xF1, 0x47, 0x84, 0x05, 0x03, 0x02, 0x20, 0x22, 0x10, 0x26, 0x15, 0x07, 0x50,
/* 9 */ 0x09, 0x07, 0x07, 0x67, 0x03, 0x0C, 0x00, 0x40, 0x00, 0xB8, 0x2D, 0x01, 0x1D, 0x00, 0x72, 0x51,
/* a */ 0xD0, 0x1E, 0x20, 0x6E, 0x28, 0x55, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x1E, 0x01, 0x1D, 0x80,
/* b */ 0x18, 0x71, 0x1C, 0x16, 0x20, 0x58, 0x2C, 0x25, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00, 0x9E, 0x8C,
/* c */ 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0xC4, 0x8E, 0x21, 0x00, 0x00,
/* d */ 0x18, 0x8C, 0x0A, 0xD0, 0x8A, 0x20, 0xE0, 0x2D, 0x10, 0x10, 0x3E, 0x96, 0x00, 0x13, 0x8E, 0x21,
/* e */ 0x00, 0x00, 0x18, 0x0E, 0x1F, 0x00, 0x80, 0x51, 0x00, 0x1E, 0x30, 0x40, 0x80, 0x37, 0x00, 0xC4,
/* f */ 0x8E, 0x21, 0x00, 0x00, 0x1C, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x8D,
```

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8. Adjustment of White Balance

Caution: Press the POWER ON KEY on R/C before W/B adjustment.

8-1. Test Equipment

- Color Analyzer (CS-1000, CA-100+(CH.10), CA-210(CH.10))

[Please adjust CA-100+ / CA-210 by CS-1000 before measuring
--> You should use Channel 10 which is Matrix compensated (White, Red, Green, Blue revised) by CS-1000 and adjust in accordance with White balance adjustment coordinate.

o Color temperature standards according to CSM and Module

CSM	PLASMA
Cool	11000K
Medium	9300K
Warm	6500K

o Change target luminance and range of the Auto adjustment W/B equipment.

Target luminance	65
Range	20

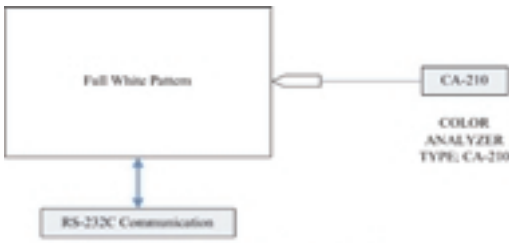
o White balance adjustment coordinate and color temperature

Cool	CS-1000	CA-100+ (CH.10)	CA-210 (CH.10)
x	0.276	0.276–0.002	0.276–0.002
y	0.283	0.283–0.002	0.283–0.002
3uv	0.000	0.000	0.000
Medium	CS-1000	CA-100+ (CH.10)	CA-210 (CH.10)
x	0.285	0.285–0.002	0.285–0.002
y	0.293	0.293–0.002	0.293–0.002
3uv	0.000	0.000	0.000
Warm	CS-1000	CA-100+ (CH.10)	CA-210 (CH.10)
x	0.313	0.313–0.002	0.313–0.002
y	0.329	0.329–0.002	0.329–0.002
3uv	0.003	0.003	0.003

[PC (for communication through RS-232C) ==> UART Baud rate : 115200 bps

8-2. Connecting Picture of the Measuring Instrument (On Automatic control)

Inside PATTERN is used when W/B is controlled. Connect to auto controller or push control R/C ADJ Key—> Enter the mode of White-Balance, the pattern will come out.



[Fig.5] connecting picture (On Automatic Control)

8-3. Auto-control Interface and Directions

(1) Adjust in the place where the influx of light like floodlight around is blocked. (illumination is less than 10ux).
(2) In case of PDP: Measure and adjust after sticking the Color Analyzer (CA-100+, CA210) to the side of the module.

In case of LCD: Adhere closely the Color Analyzer (CA210) to the module less than 10cm distance, keep it with the surface of the Module and Color Analyzer's Prove vertically.(80~100°).

(3) Aging time
1) After aging start, keep the power on (no suspension of power supply) and heat-run over 15 minutes.
2) In case of PDP, keep white pattern using inside pattern.
3) In case of LCD, using 'no signal' or 'full white pattern' or the others, check the back light on.

o Auto Adjustment Map(RS-232C)

	RS-232C COMMAND [CMD ID DATA]			MIN	CENTER (DEFAULT)			MAX
	Cool	Mid	Warm		Cool	Mid	Warm	
R Gain	jg	Ja	jd	00	192	192	192	255
G Gain	jh	Jb	je	00	192	192	192	255
B Gain	ji	Jc	jf	00	192	192	192	255
R Cut					128	128	128	255
G Cut					128	128	128	255
B Cut					128	128	128	255

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8-4. Manual White Balance

(1) Press the POWER ON KEY on R/C for adjustment and heat run over 5 minutes.
(2) Zero Calibrate CA-100+ / CA-210, and when controlling, stick the sensor to the center of PDP module surface.
(3) Press the ADJ KEY on R/C and enter EZ ASJUST
Select “3.W/B ADJUST” and press ENTER(∨)
Set test-pattern on and display inside pattern.

(4) Control is carried out on three color temperatures, COOL, MEDIUM, WARM.(Control is carried out three times)

<Temperature: COOL>
- R-offset / G-offset / B-offset is set to 128
- Control R-Gain and G-Gain.
- Each gain is limited to 192

<Temperature: MEDIUM>
- R-offset / G-offset / B-offset is set to 128
- Control R-Gain and G-Gain.
- Each gain is limited to 192

<Temperature: WARM>
- R-offset / G-offset / B-offset is set to 128
- Control G-Gain and B-Gain.
- Each gain is limited to 192

9. HDCP SETTING(Not necessary)

Caution: Key is saved in external eeprom.

10. RS-232C

Press In-start key and select 4.Baud Rate menu. Check RS-232C after changing Baud Rate 115200.

11. OPTION

(1) Press ADJ R/C In-start key and select 0.TOOL OPTION, 1.AREA OPTION
(2) Select Model name and Country by using F/G(VOL +/-) in accordance with destination

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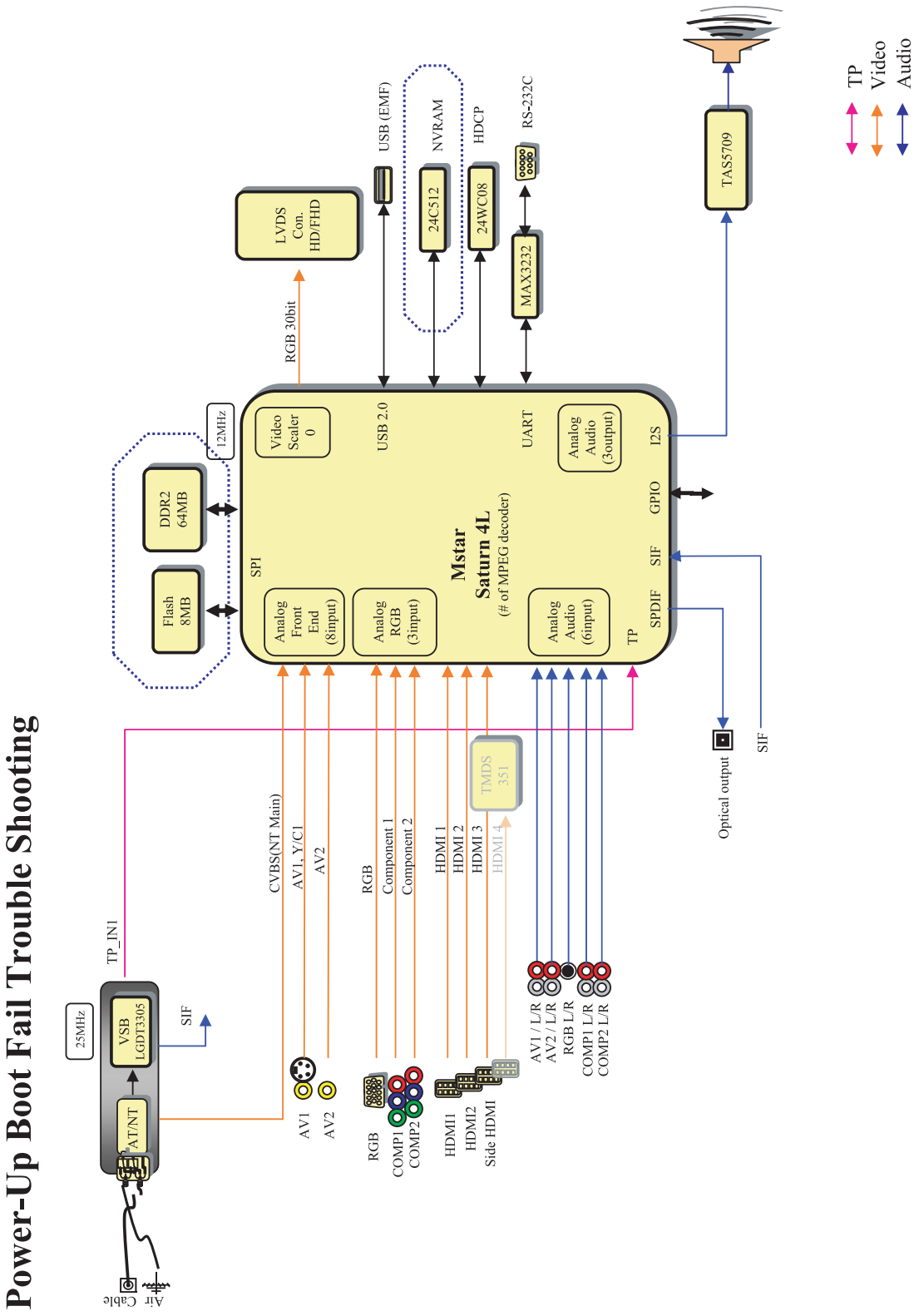

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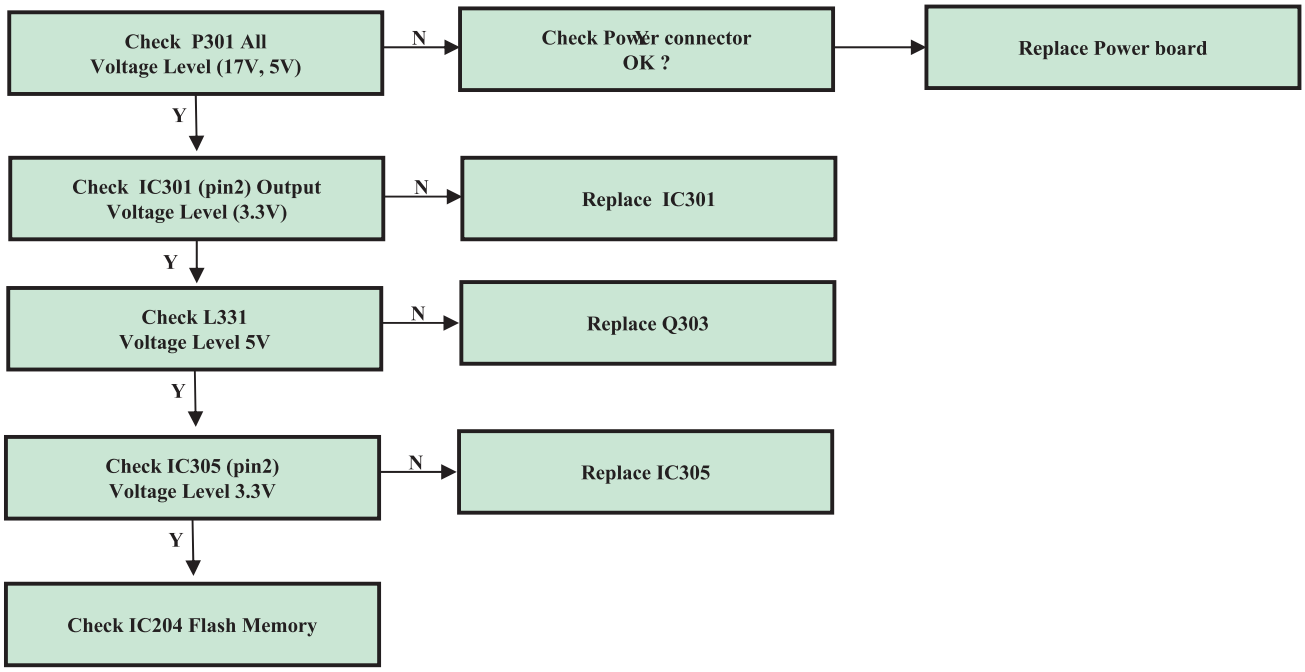
Power-Up Boot Fail Trouble Shooting



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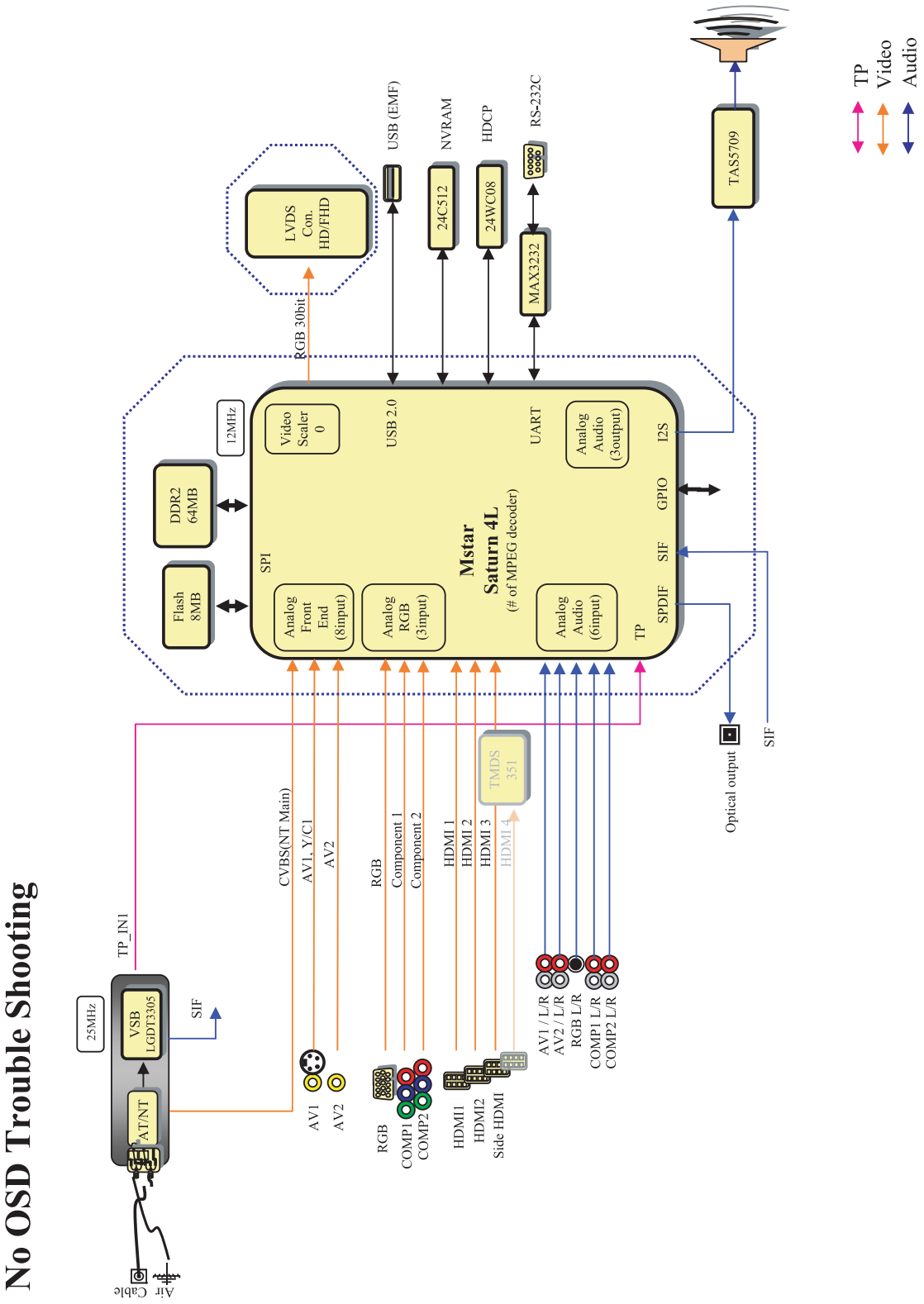

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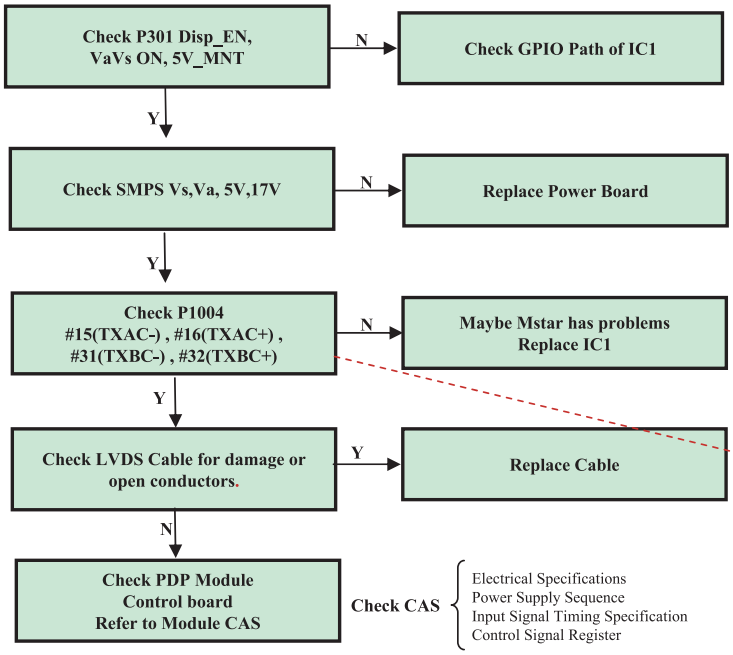
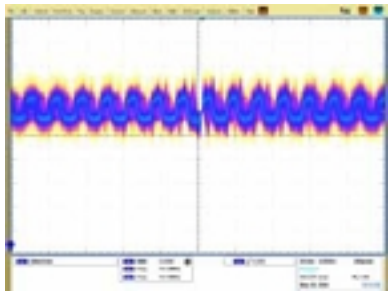
No OSD Trouble Shooting





It should satisfy the Pixel Clock on CAS.

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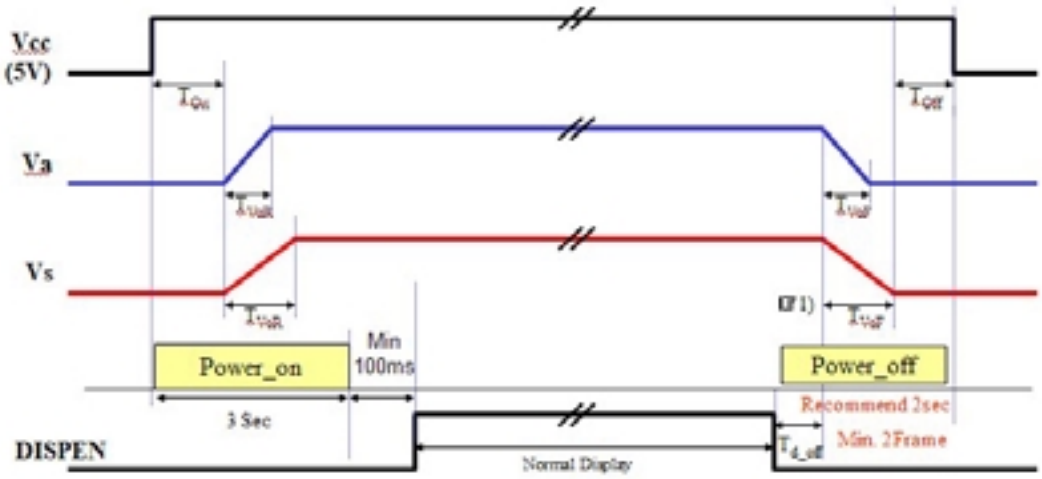
No OSD Trouble Shooting (Module Power Sequence)



Symbol	Description	Min.	Max.	unit
T_{On}	Time interval between 90% of Vcc and 10% of Vs when Power On	500	-	msec
T_{Off}	Time interval between 10% of Vs and 90% of Vcc when Power Off	20	-	msec
T_{Va_R}	Rising Time of Va (10% to 90%)	10	300	msec
T_{Va_F}	Falling Time of Va (90% to 10%)	50	300	msec
T_{Vs_R}	Rising Time of Vs (10% to 90%)	100	800	msec
T_{Vs_F}	Falling Time of Vs (90% to 10%)	90	500	msec
T_{d_off}	Time interval between DISPEN falling edge and 90% of Vs when Power Off	40	-	msec
		Recommended 2sec		

< 42G2 >

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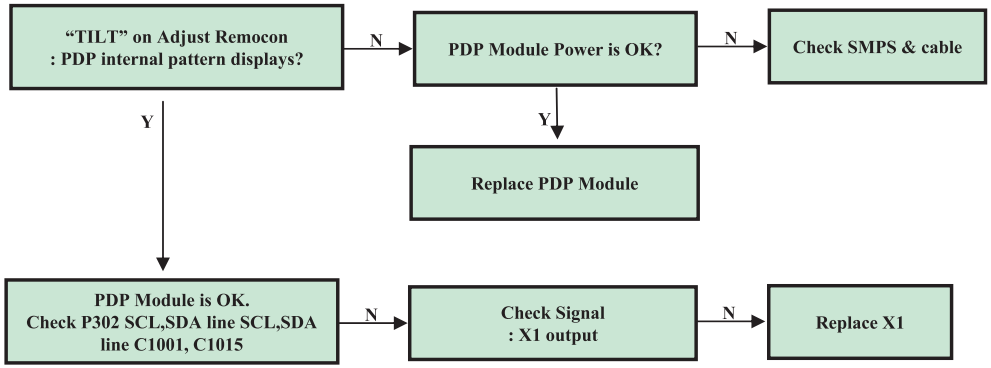
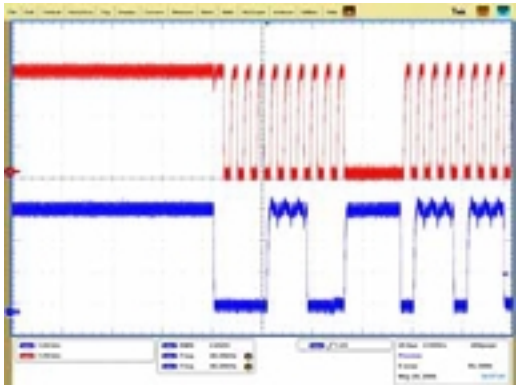
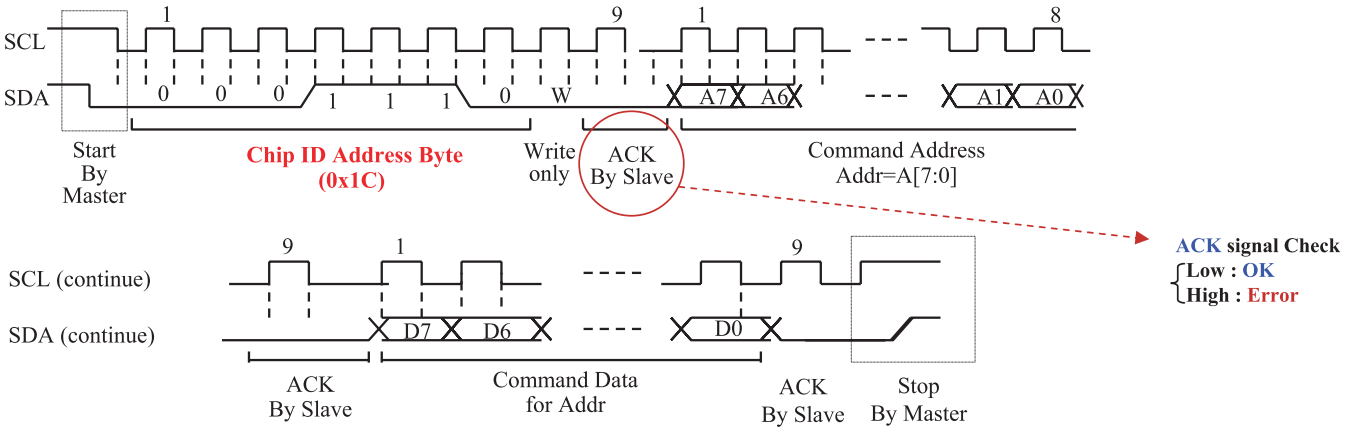
Module Control Trouble Shooting





< Sample Signal on C1001, C1015 >



Master : Image Board
Slave : PDP Module

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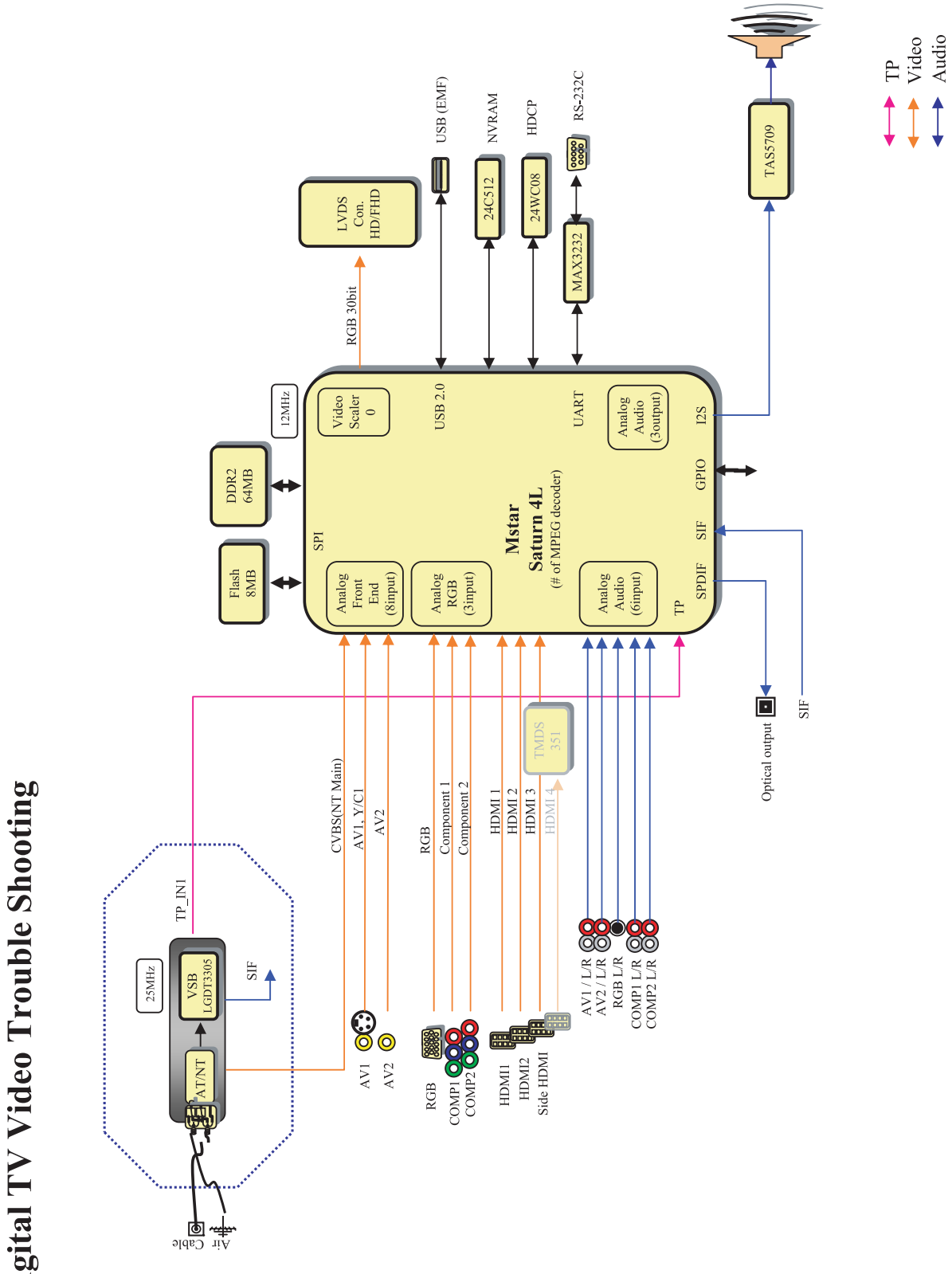

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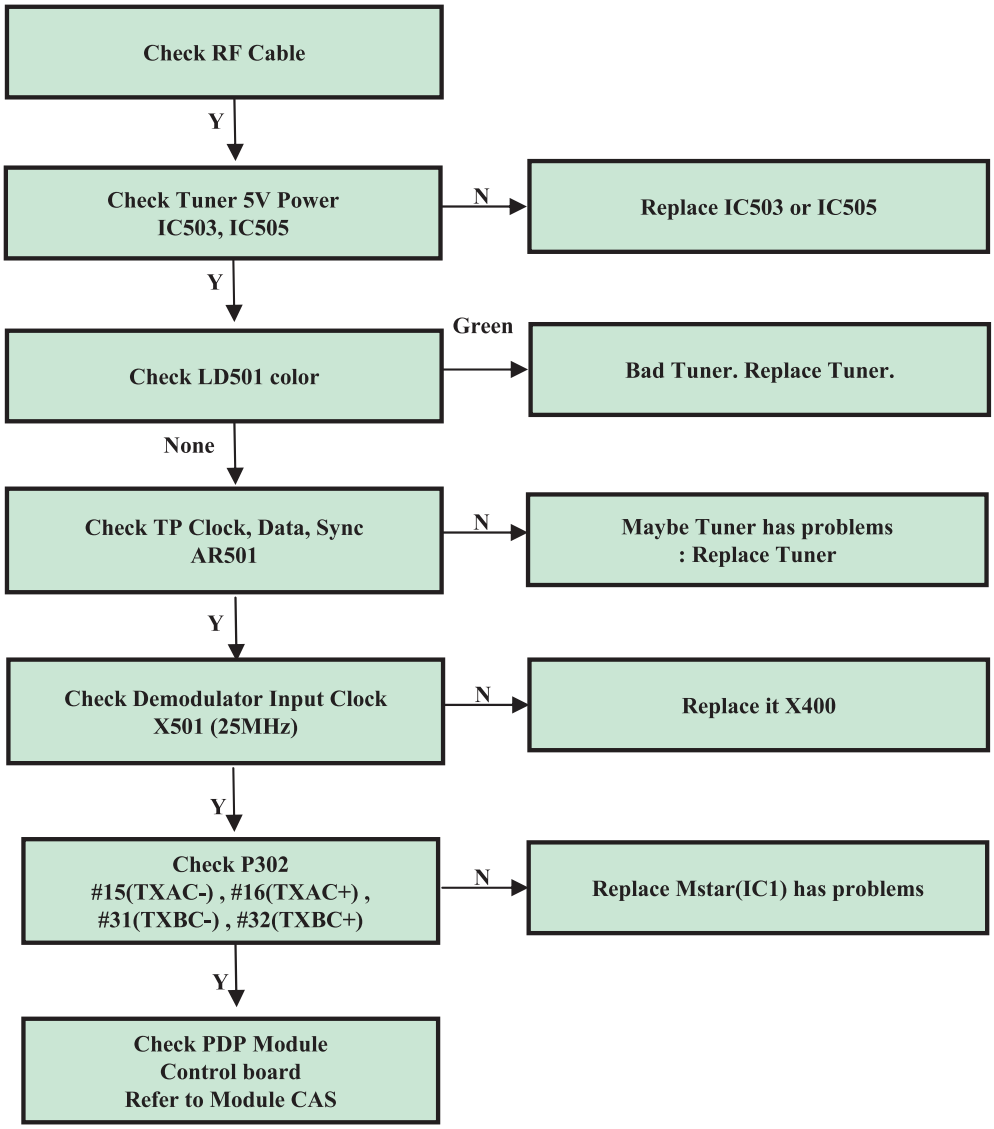
Digital TV Video Trouble Shooting



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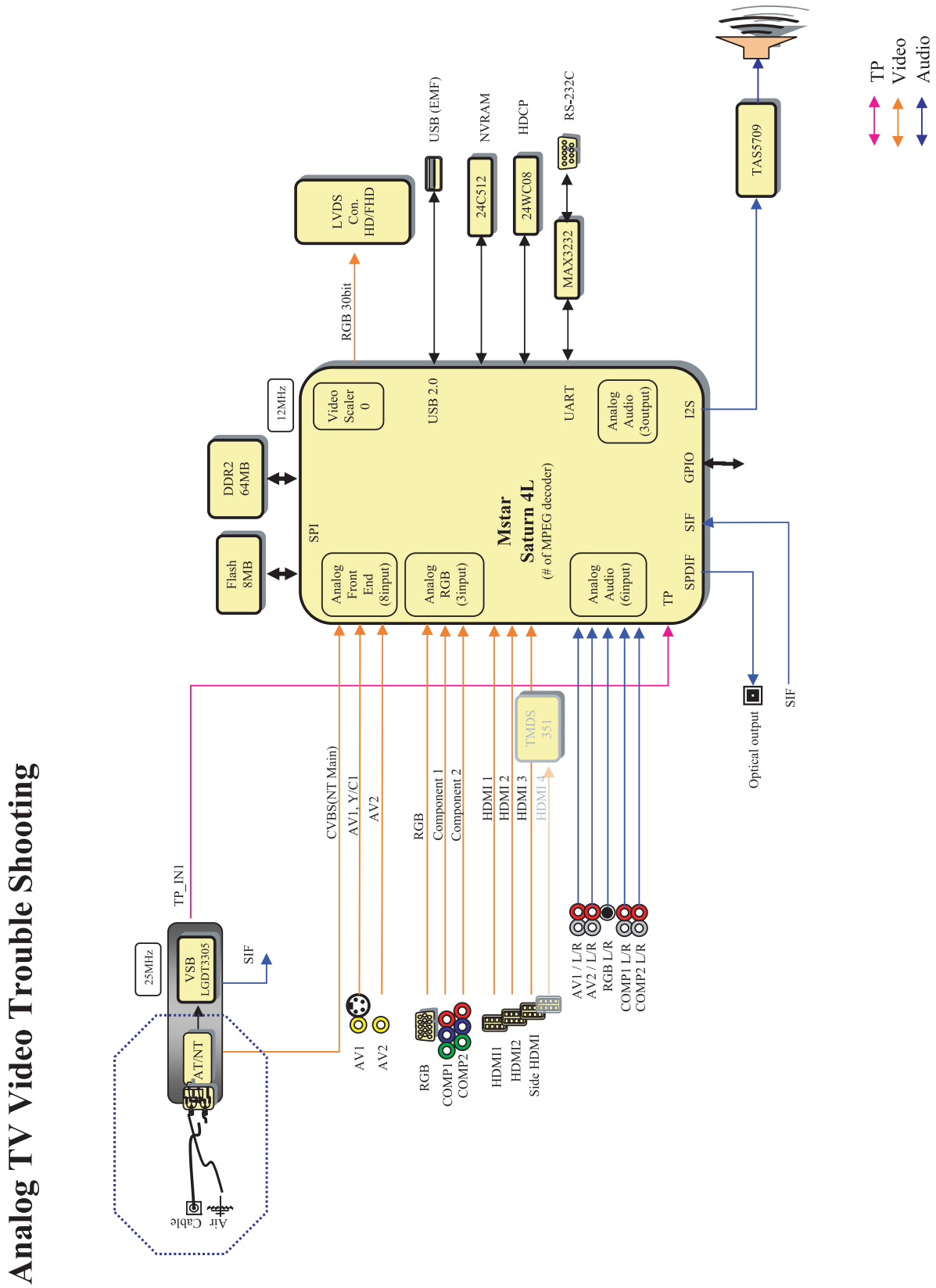

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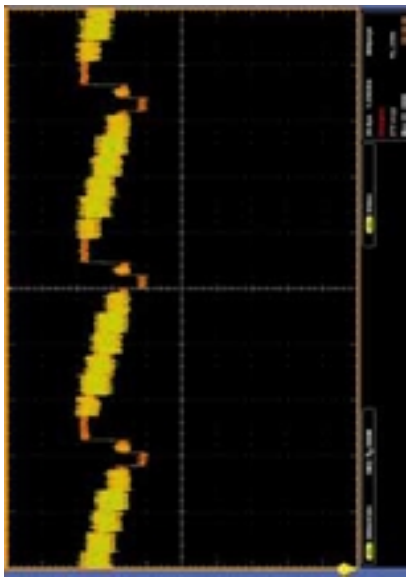
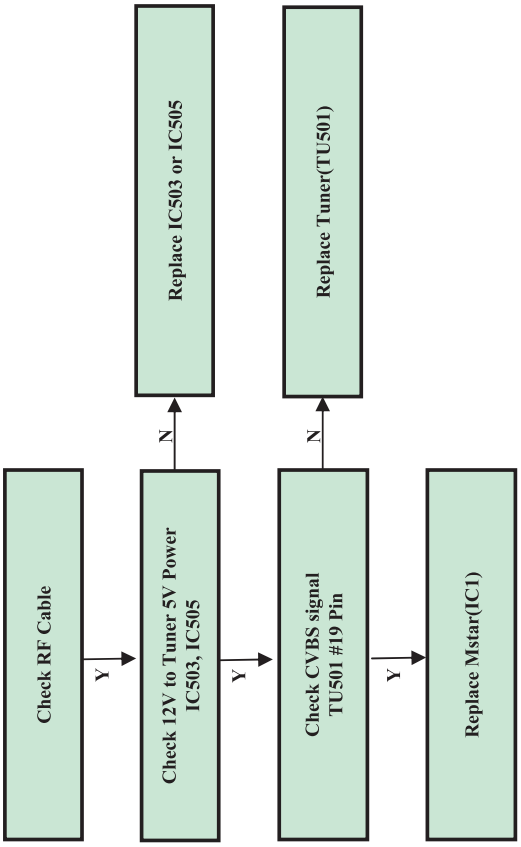


< CVBS waveform – sample >
- Defend on the input signal.

Analog TV Video Trouble Shooting



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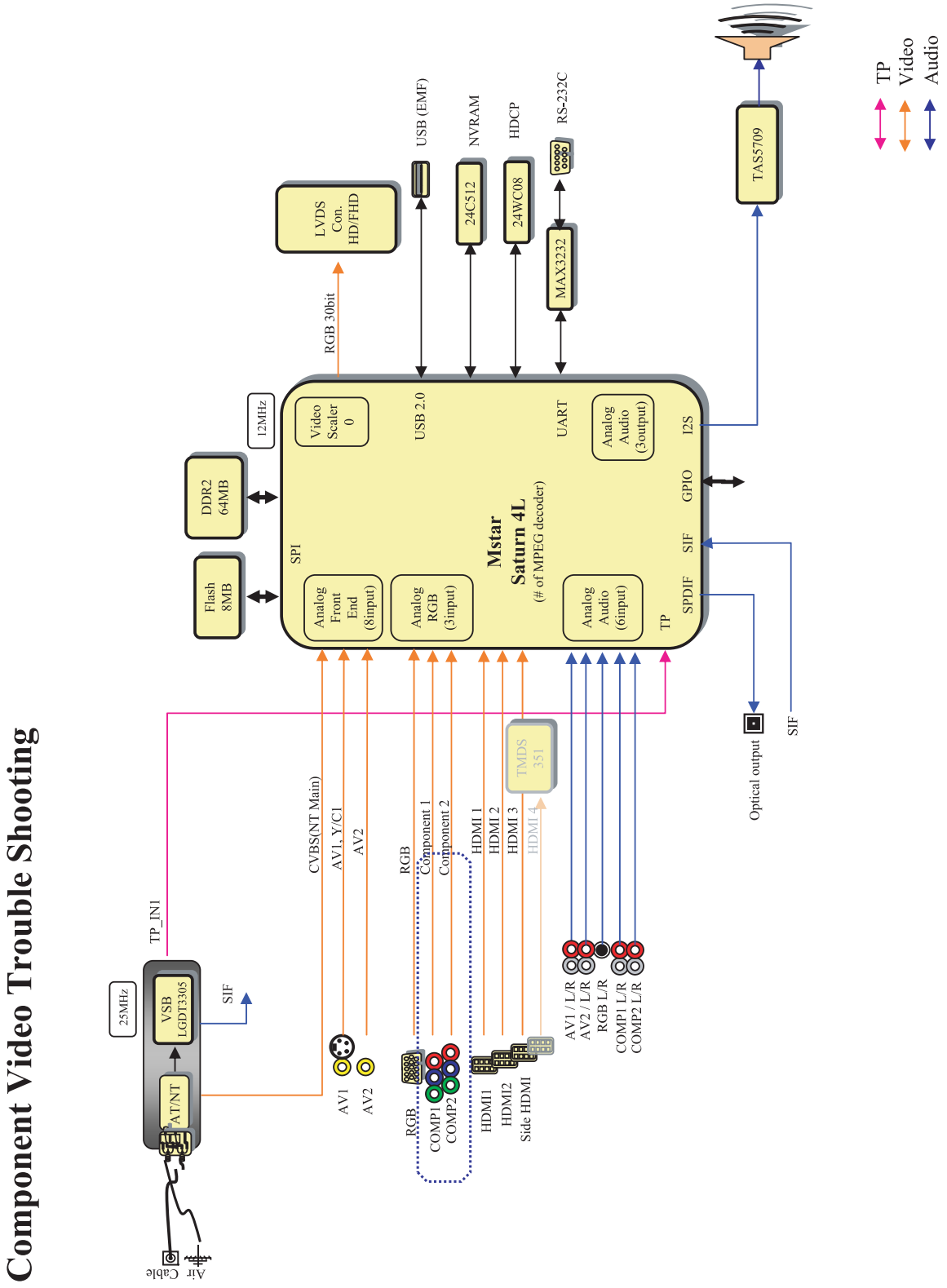

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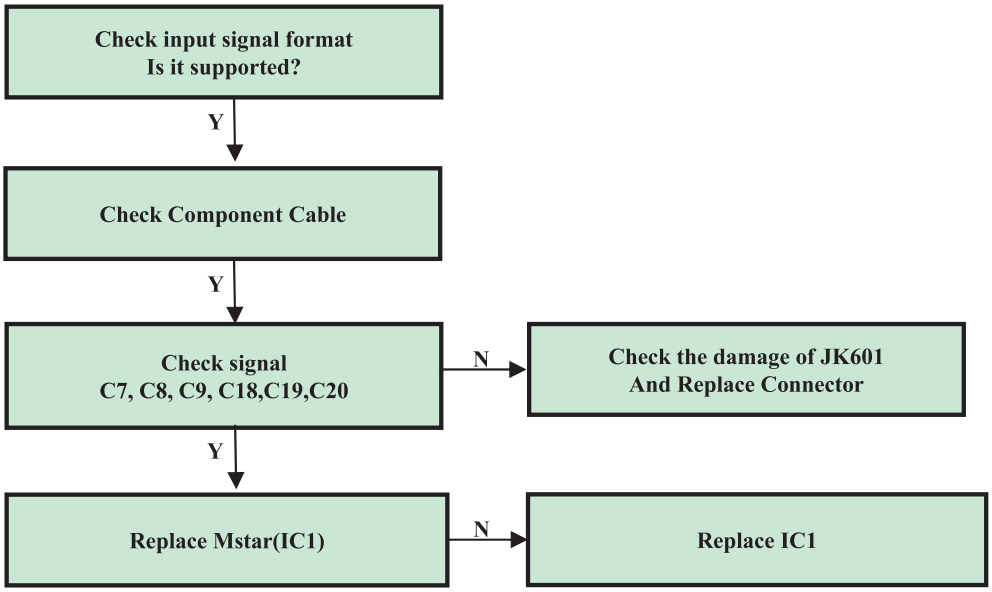
Component Video Trouble Shooting



*** Measured signals depend on the input signal.**

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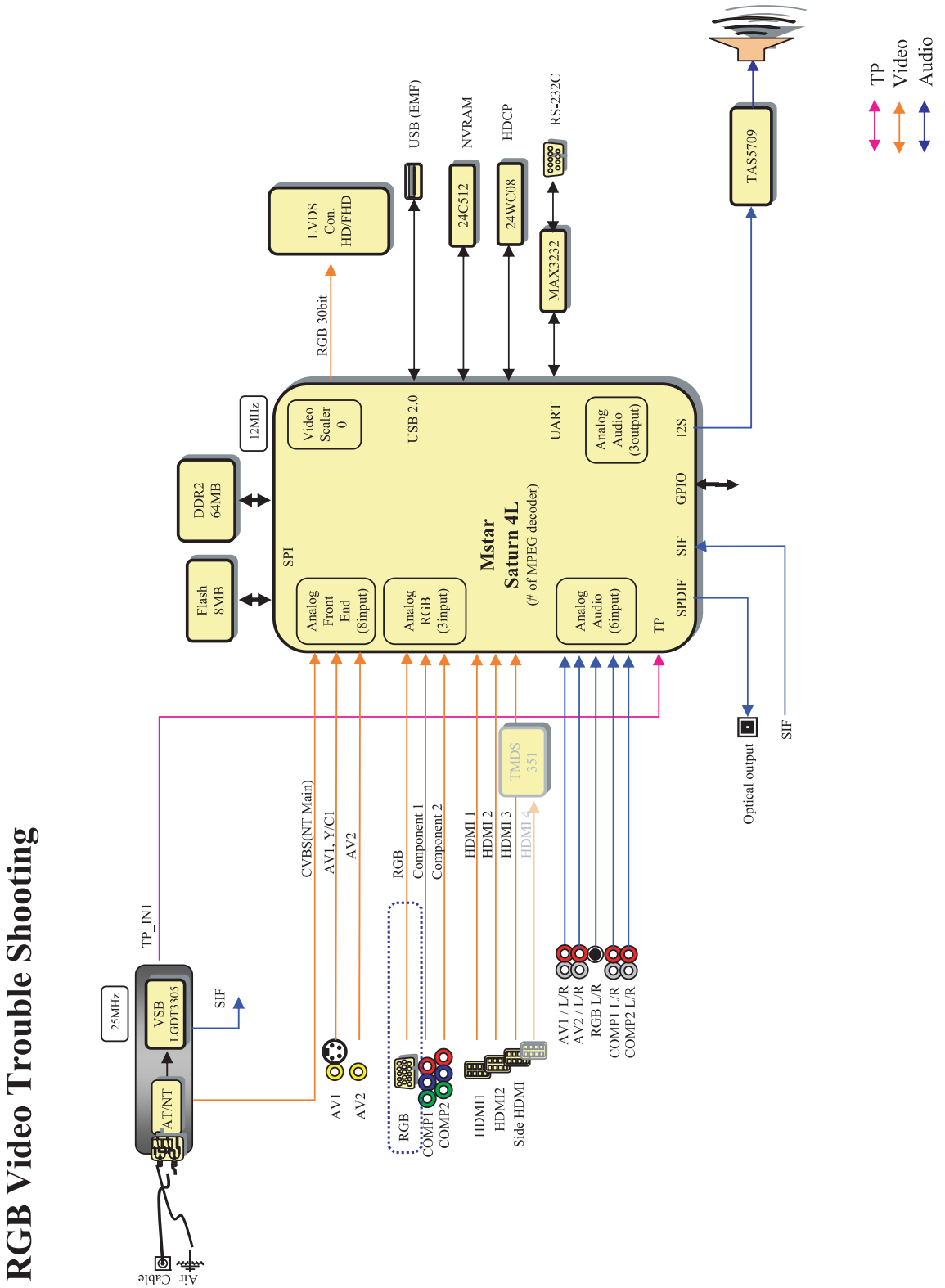

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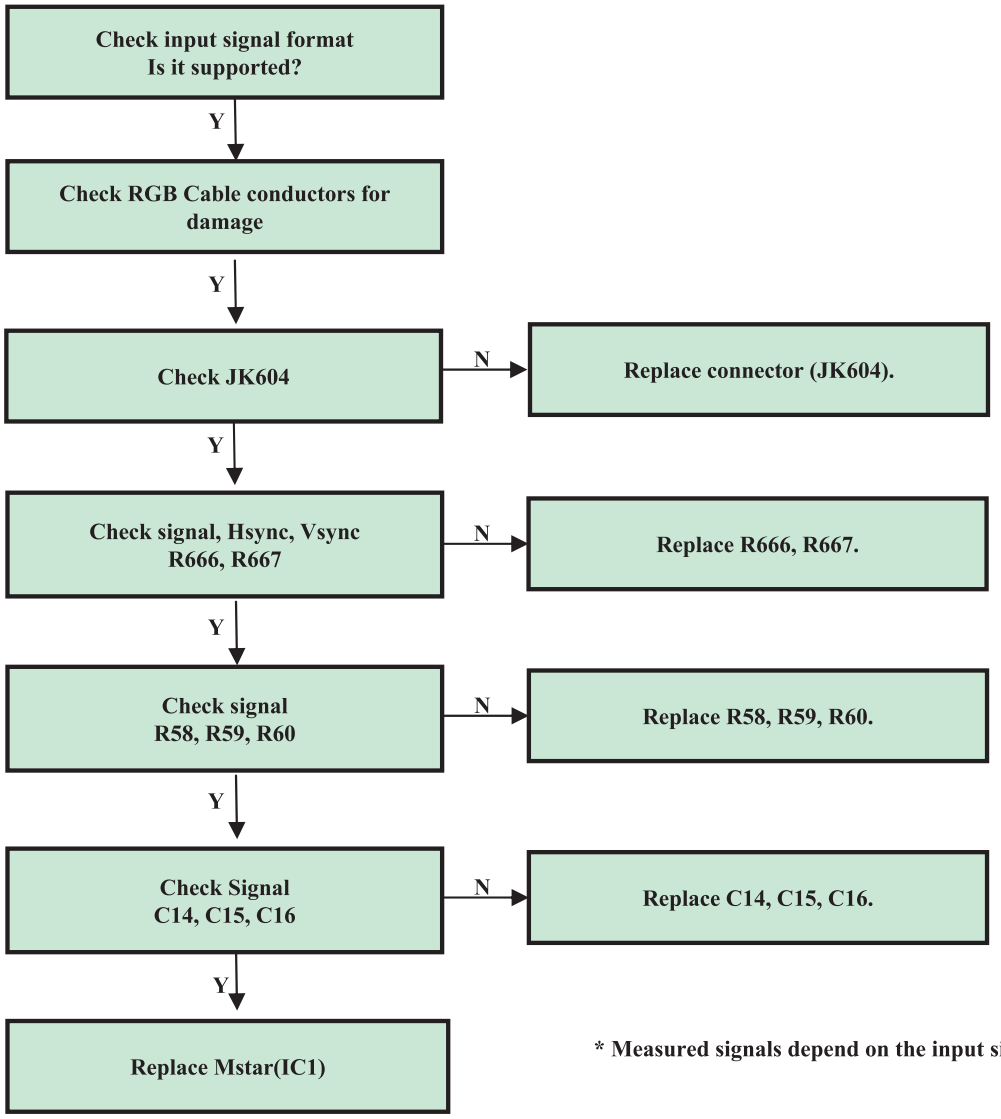
RGB Video Trouble Shooting



* Measured signals depend on the input signal.

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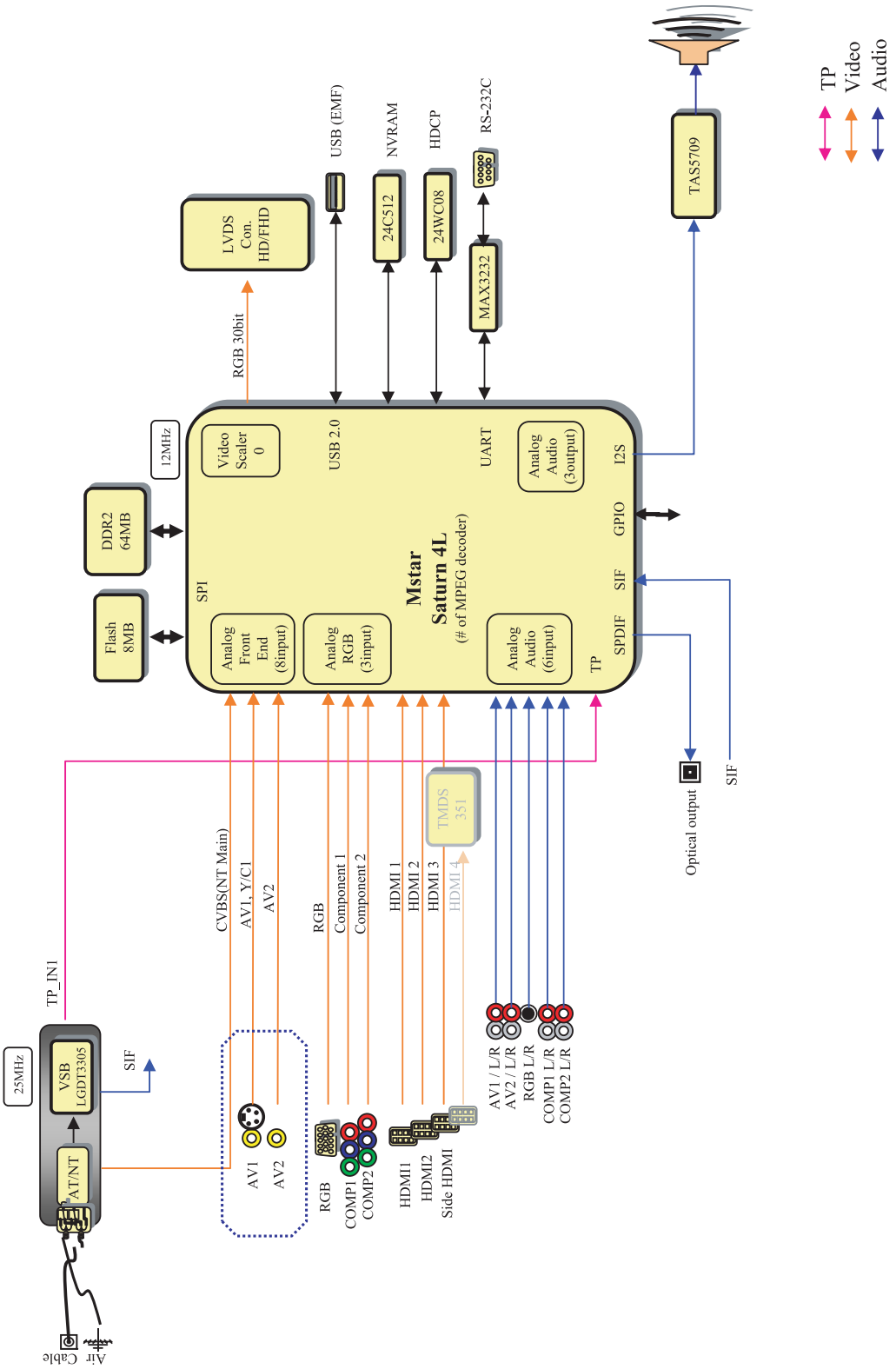
AV Video Trouble Shooting



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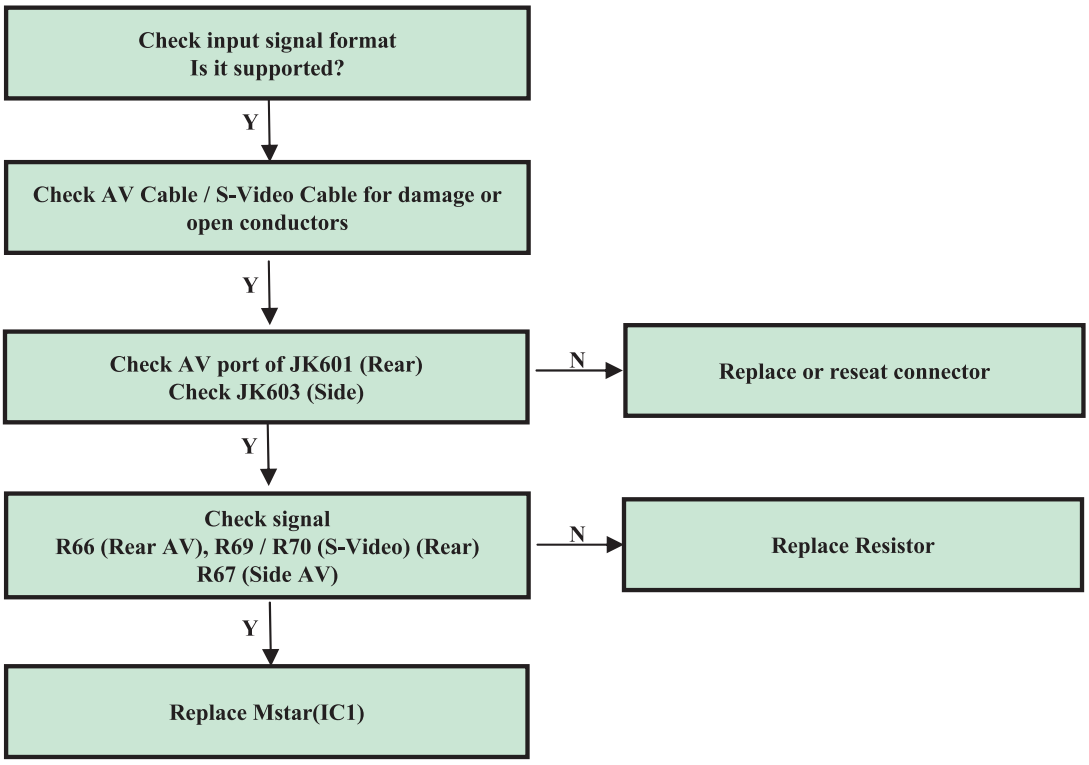
AV Video Trouble Shooting



*** Measured signals depend on the input signal.**

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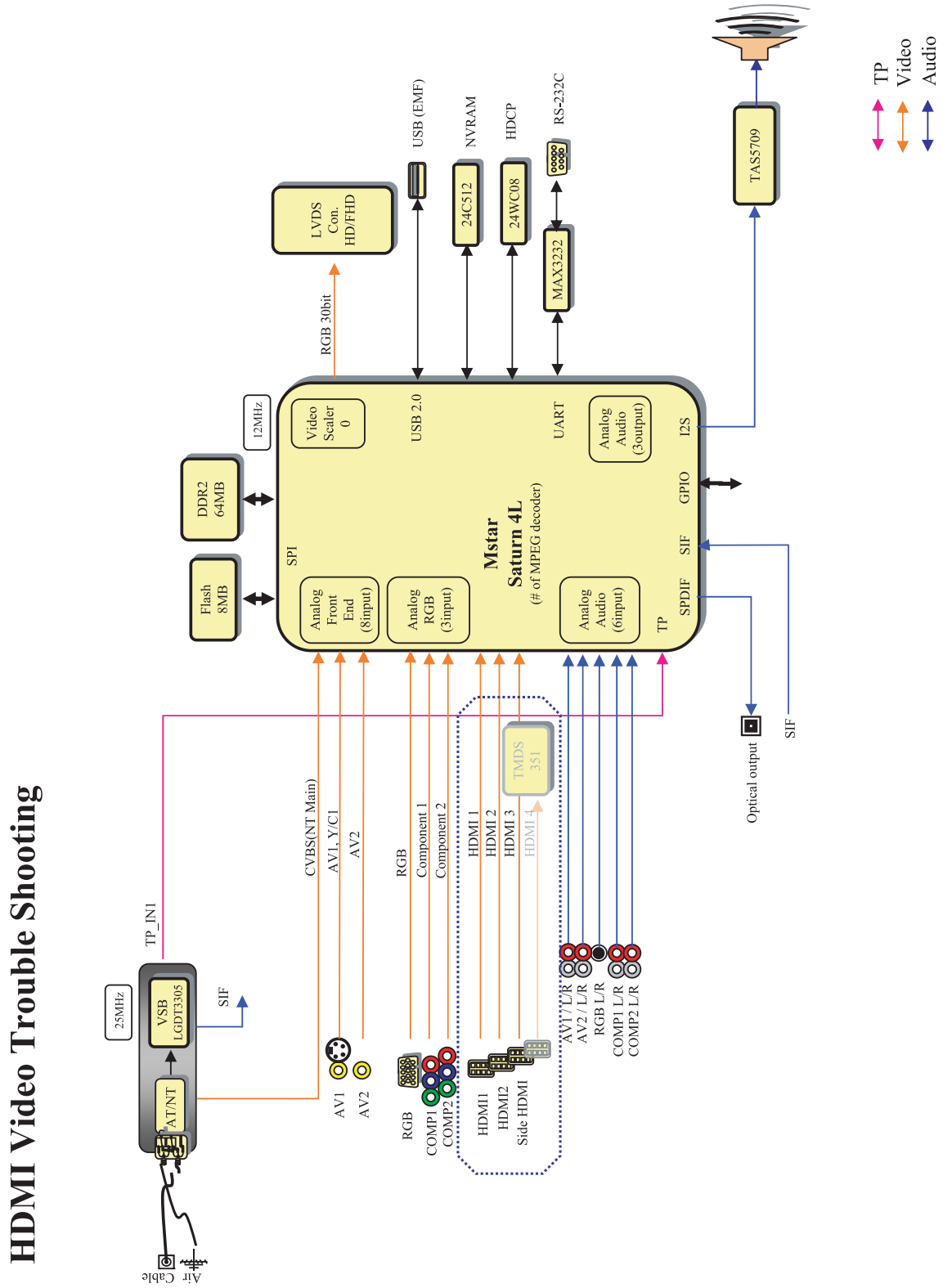

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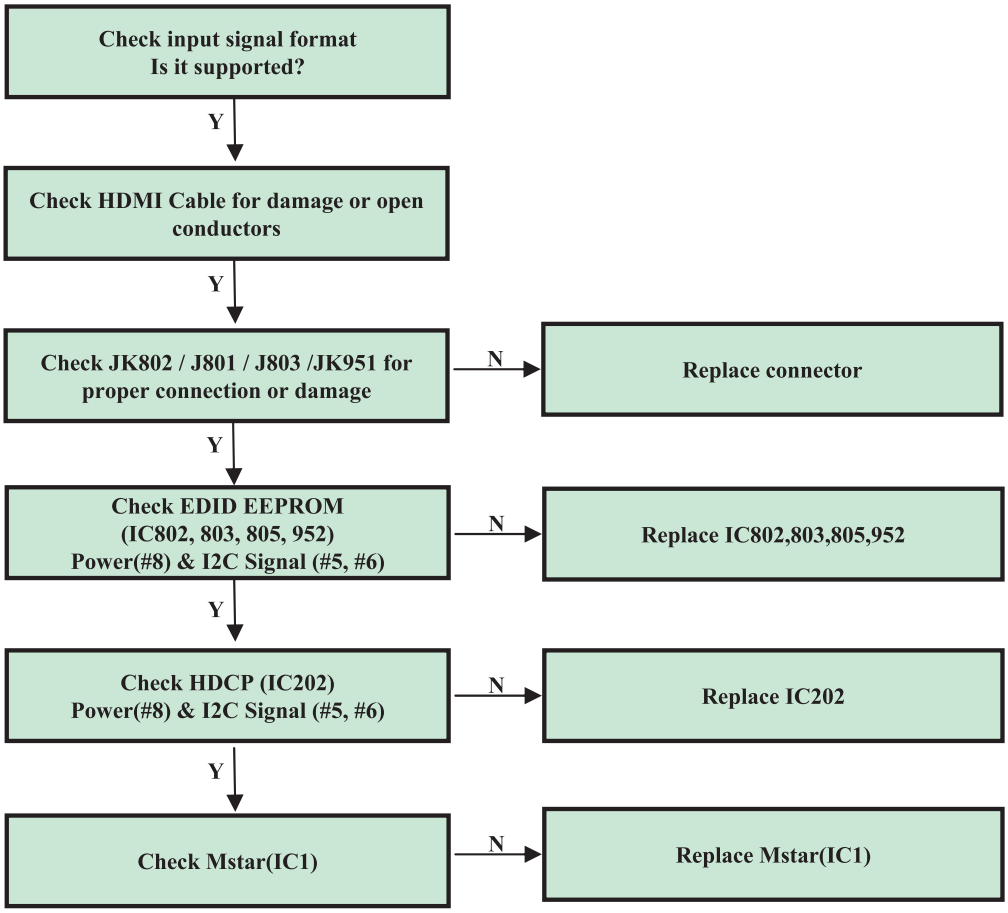
HDMI Video Trouble Shooting



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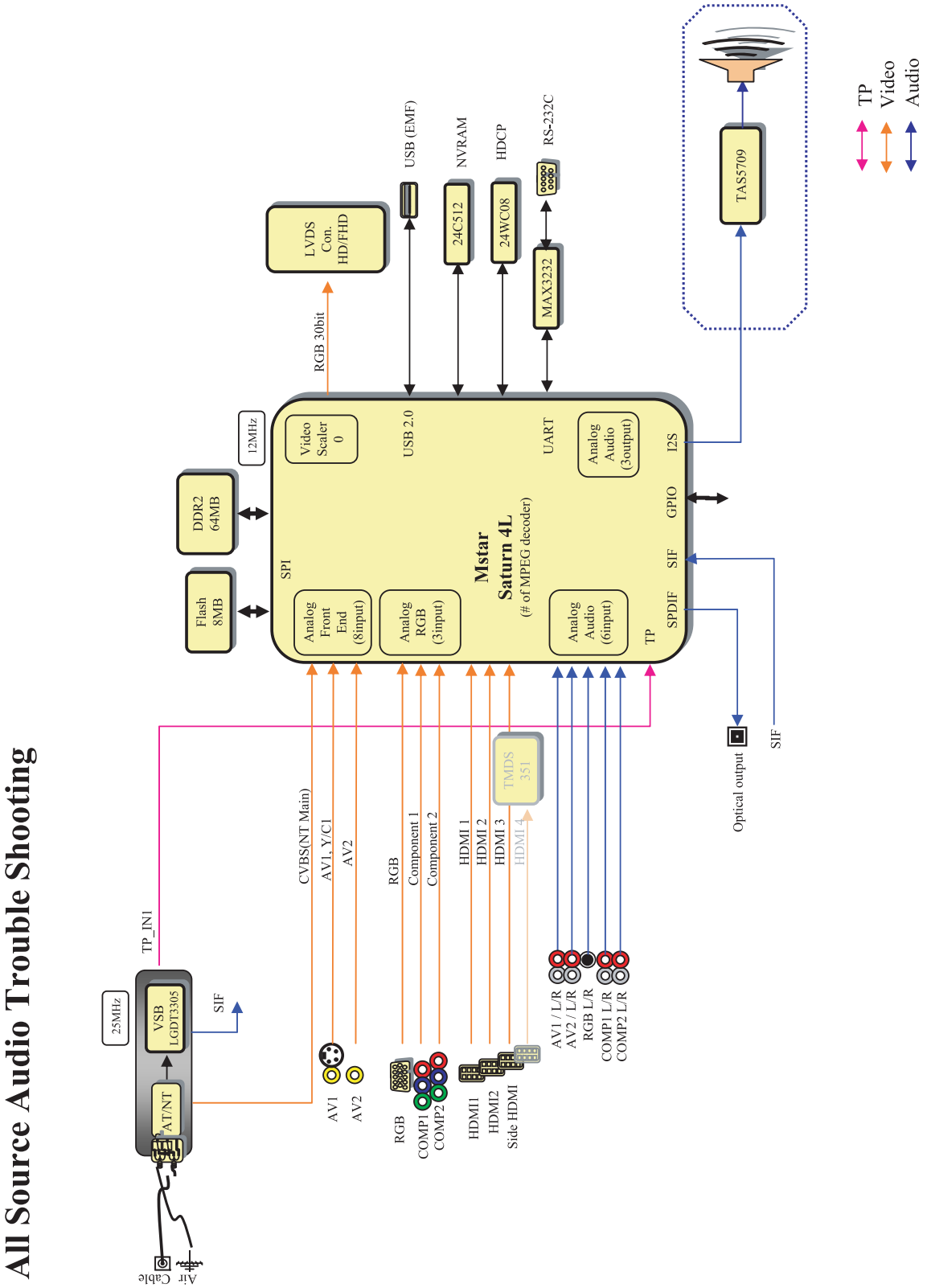

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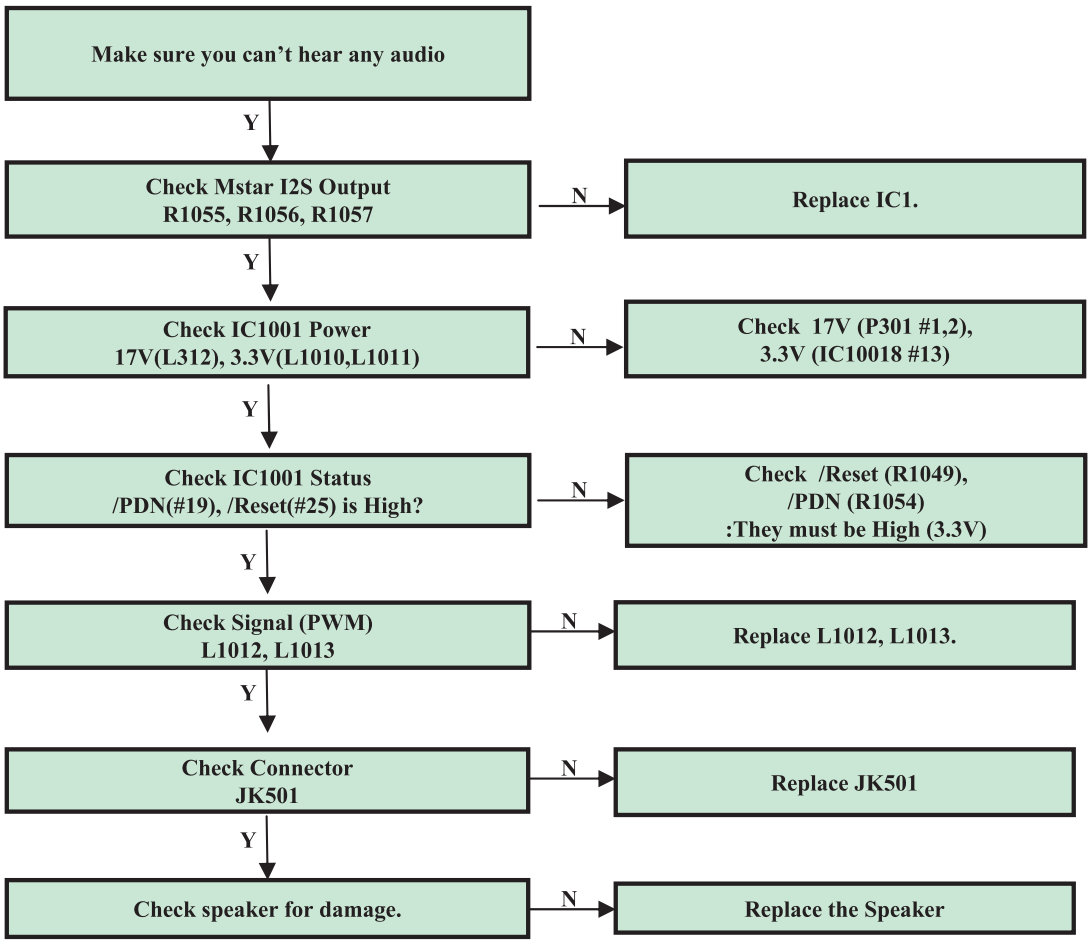
All Source Audio Trouble Shooting



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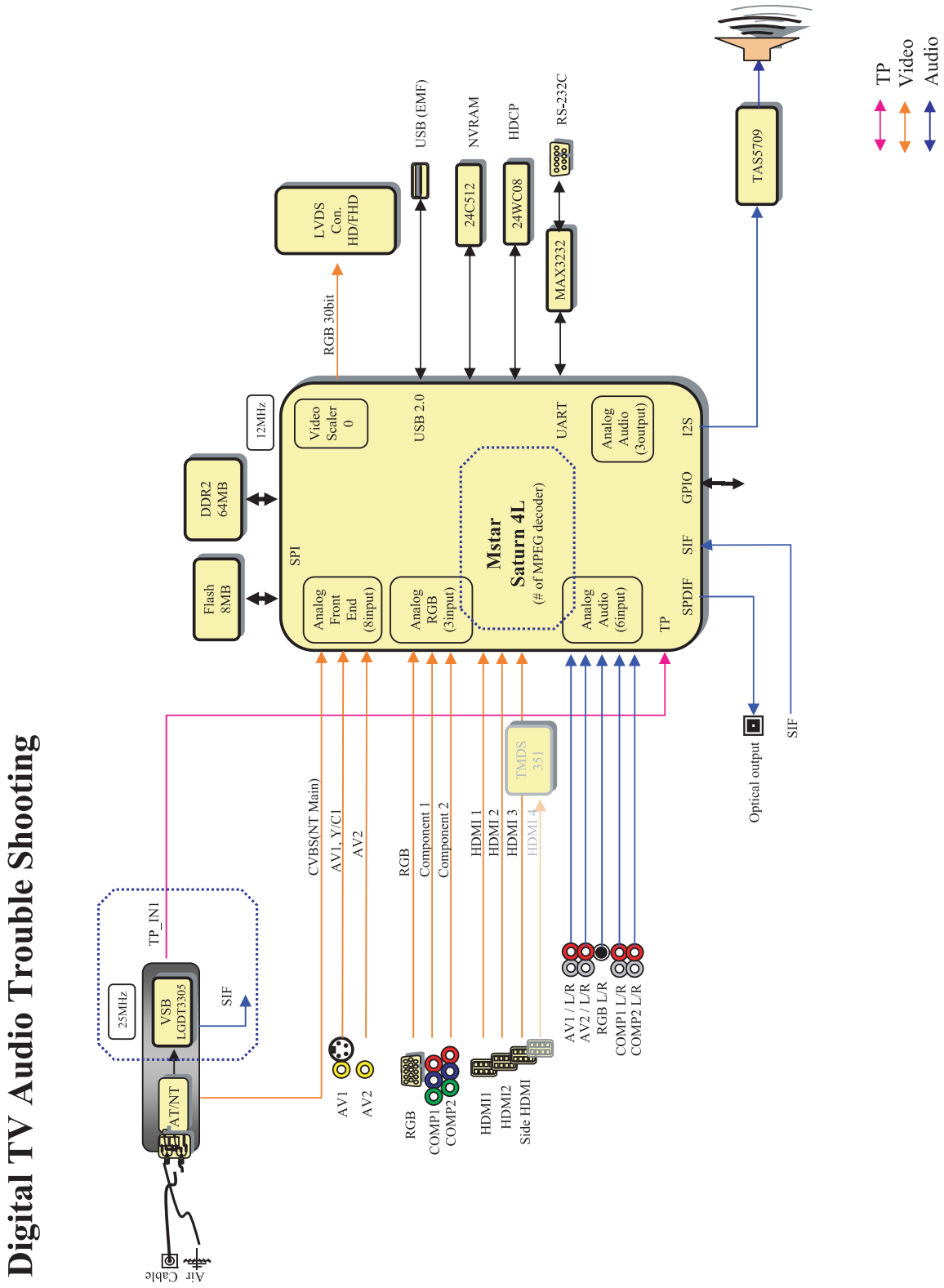

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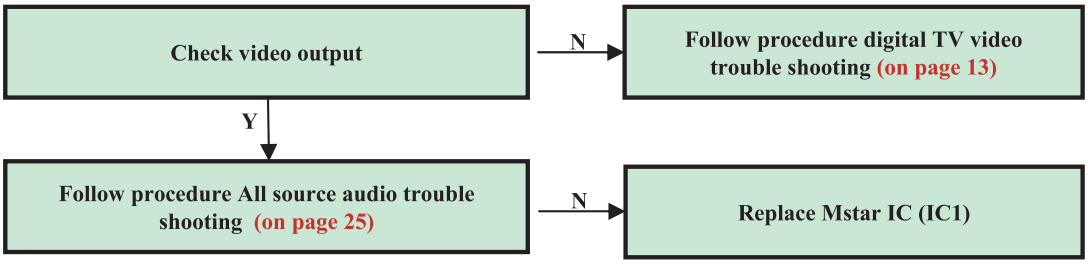
Digital TV Audio Trouble Shooting


Check video output
N
Follow procedure digital TV video trouble shooting (on page 13)
Y
Follow procedure All source audio trouble shooting (on page 25)
N
Replace Mstar IC (IC1)

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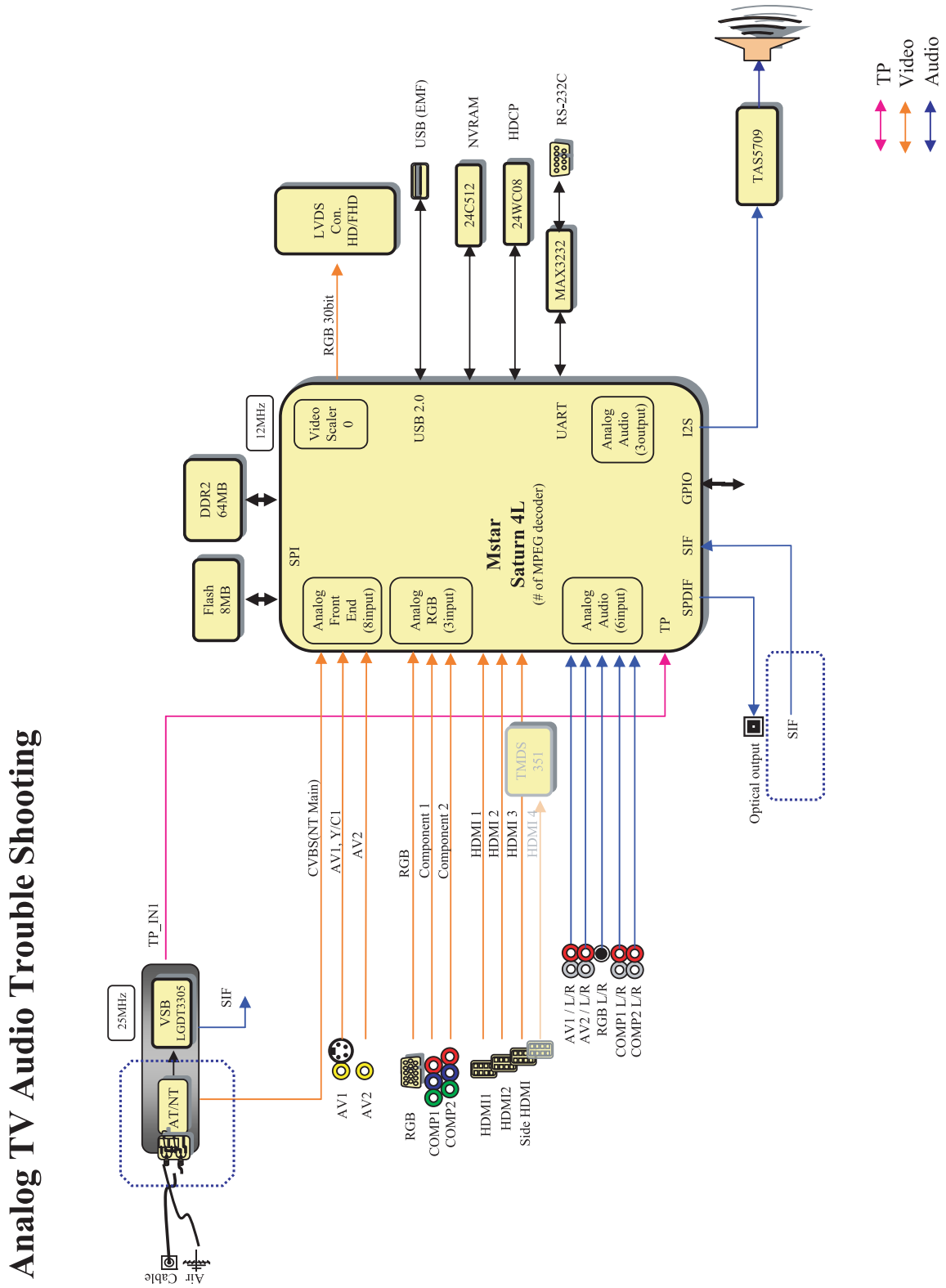

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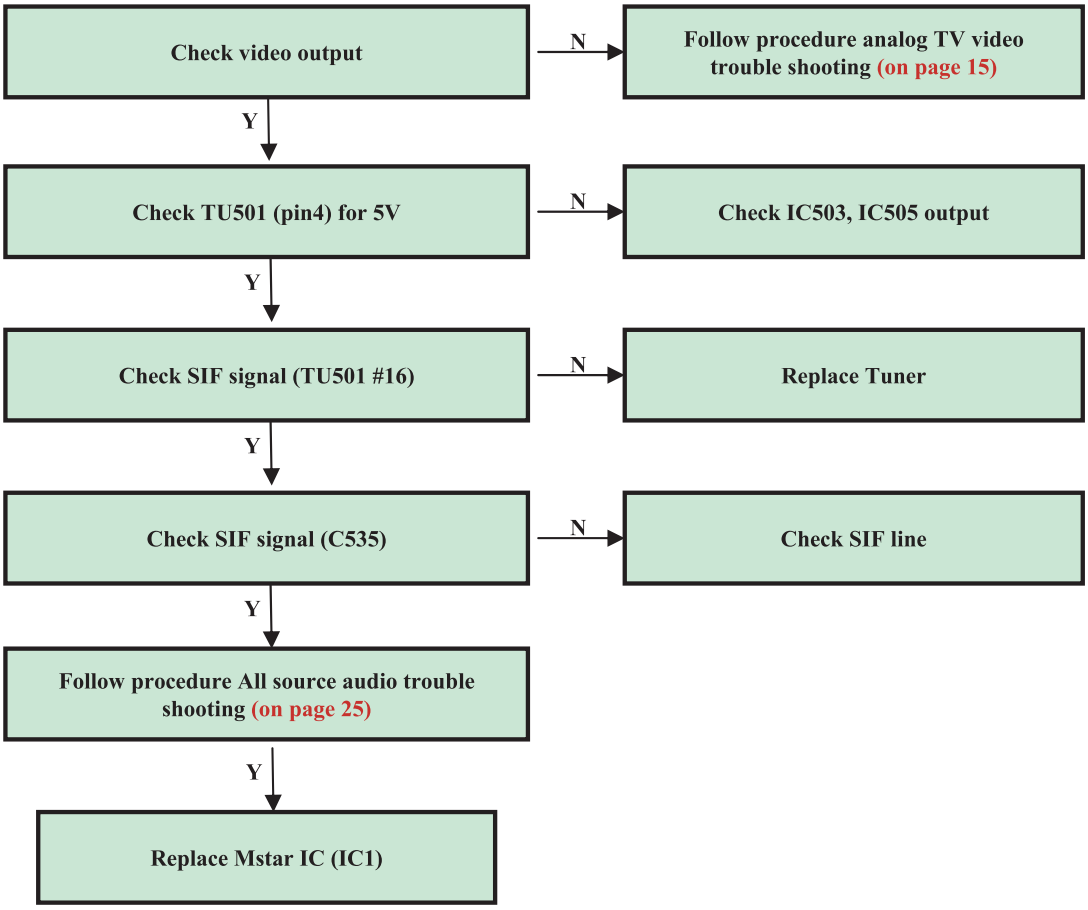
Analog TV Audio Trouble Shooting



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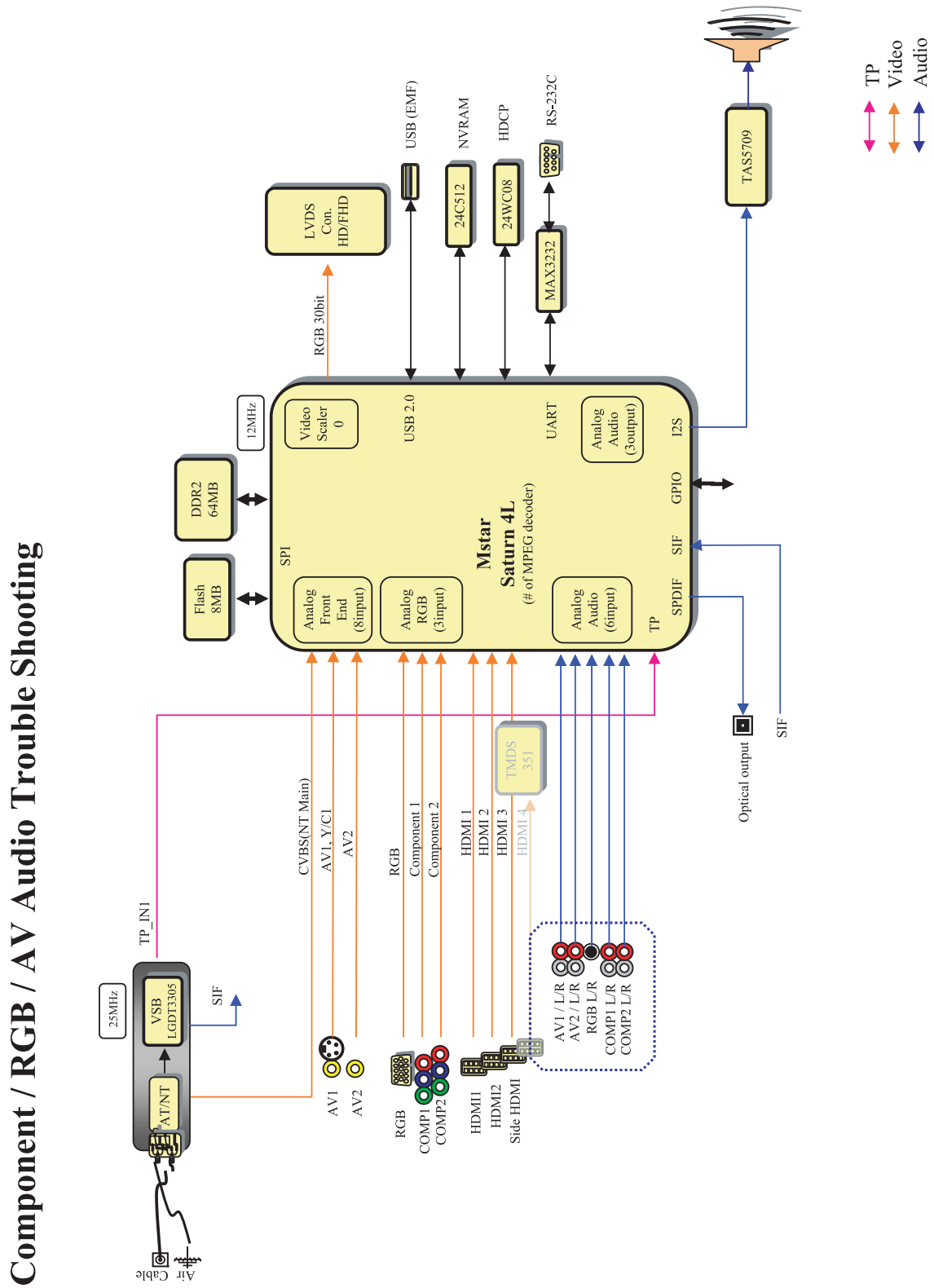

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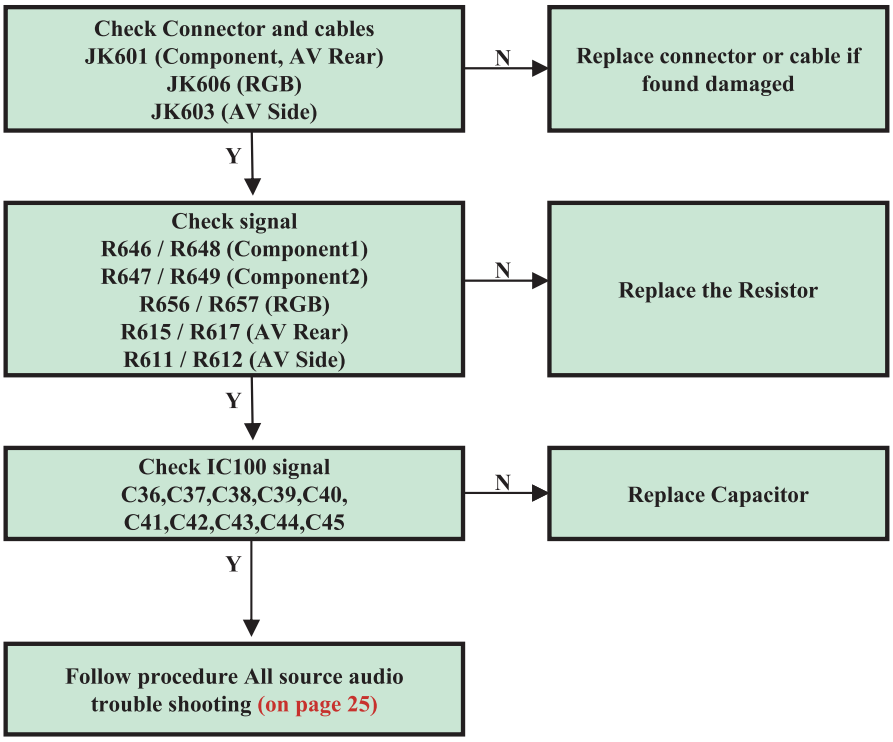
Component / RGB / AV Audio Trouble Shooting



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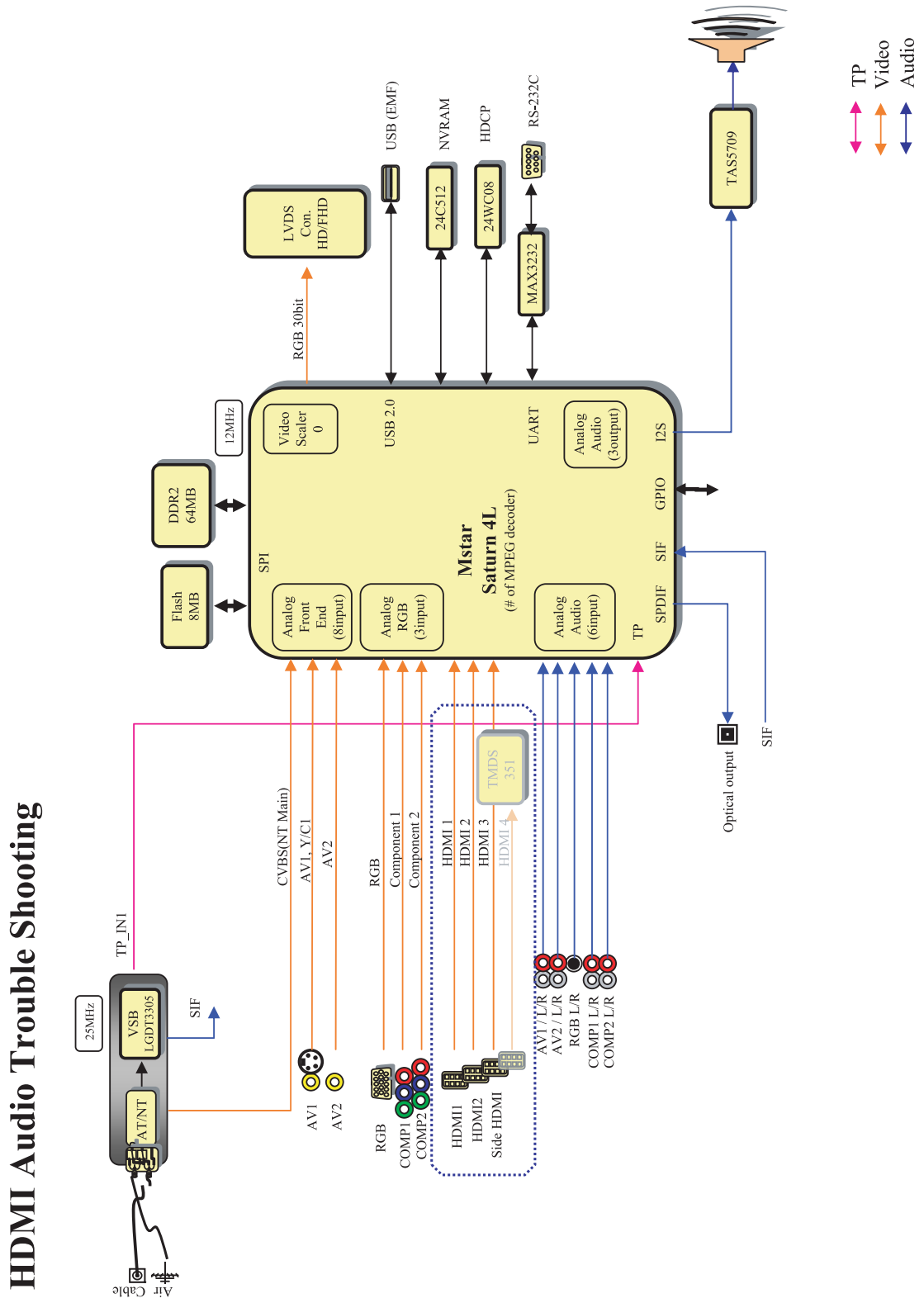

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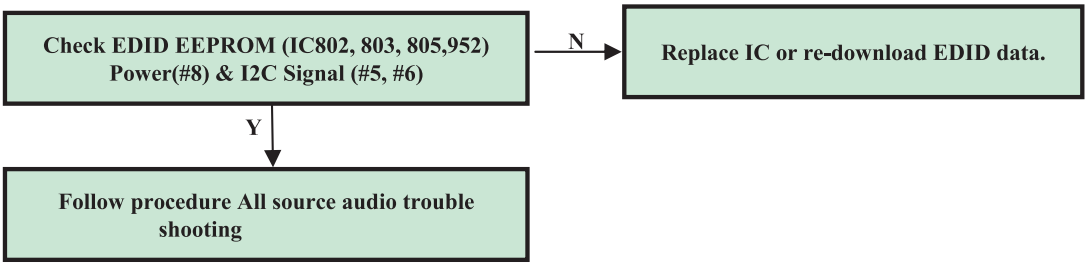
HDMI Audio Trouble Shooting


Check EDID EEPROM (IC802, 803, 805,952)
Power(#8) & I2C Signal (#5, #6)
N
Replace IC or re-download EDID data.
Y
Follow procedure All source audio trouble shooting

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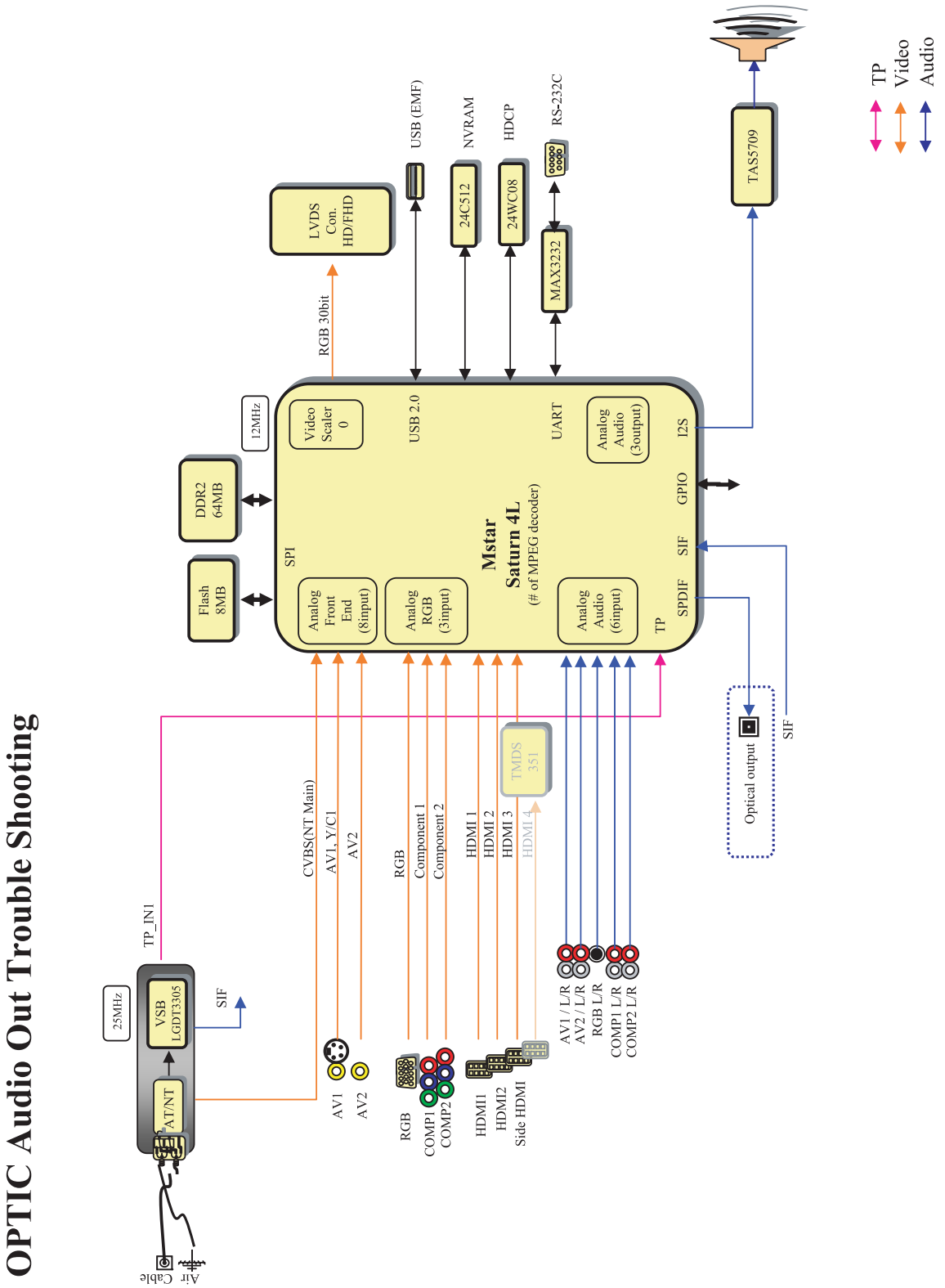

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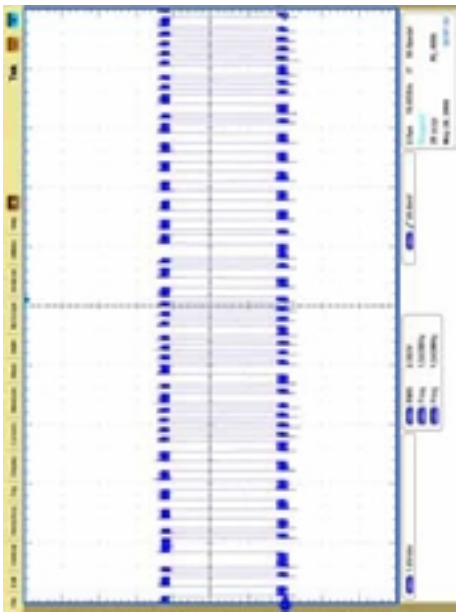
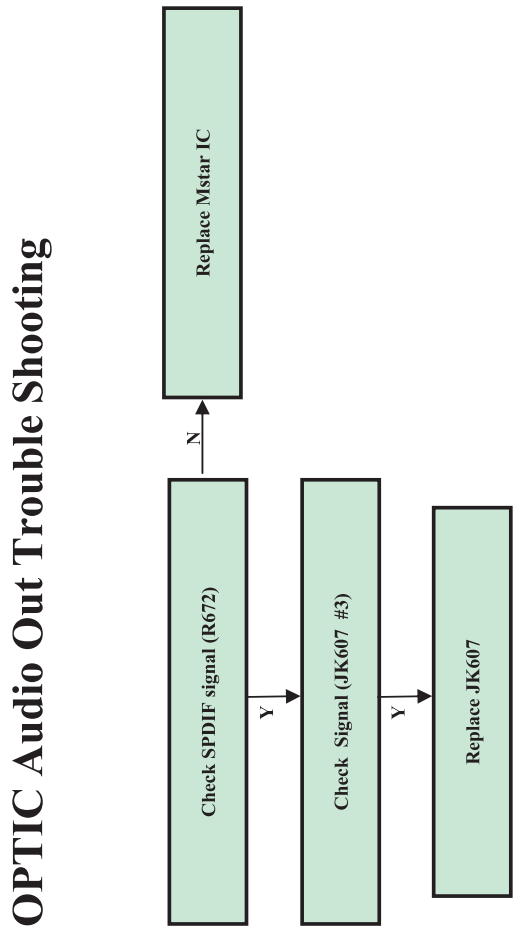


< SPDIF waveform – sample >
- Defend on the input signal.

OPTIC Audio Out Trouble Shooting



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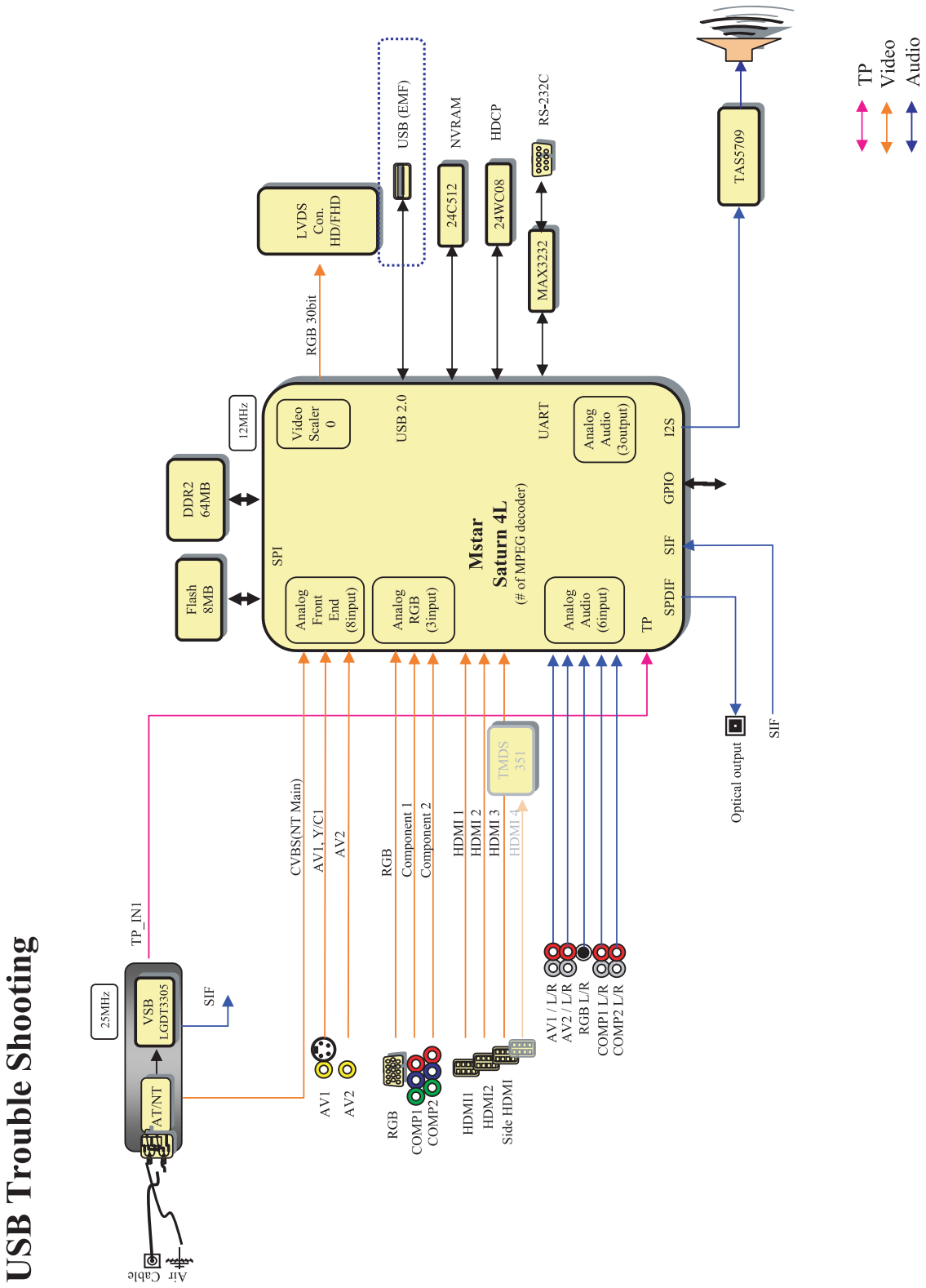

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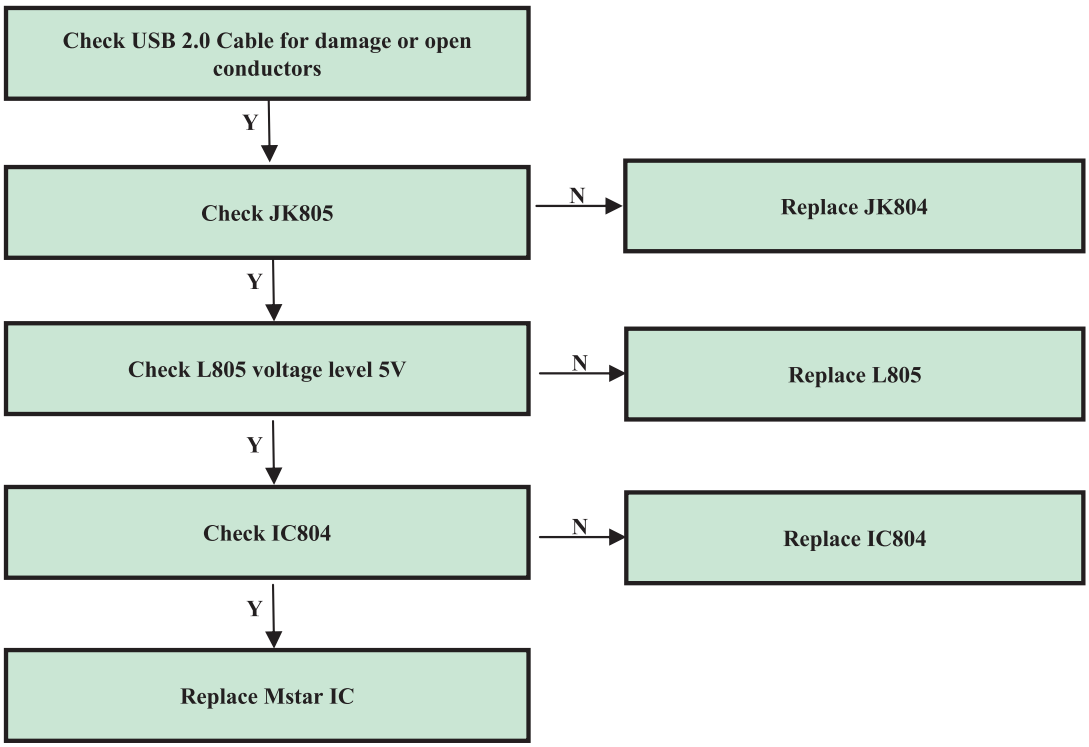
USB Trouble Shooting



• Exception

- USB power could be disabled by inrushing current
- In this case, remove the device and try to reboot the TV (AC power off/on)

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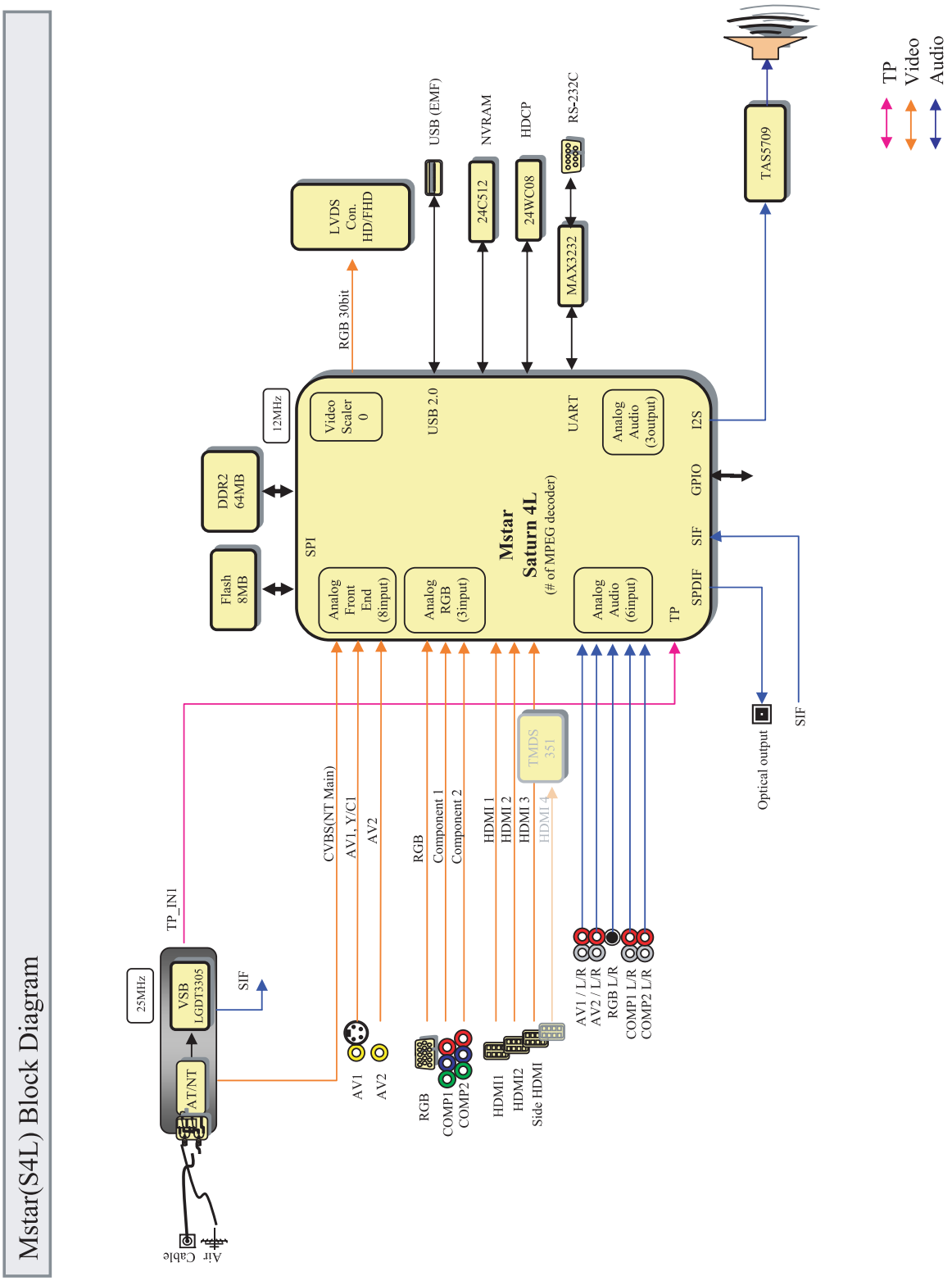
BLOCK DIAGRAM



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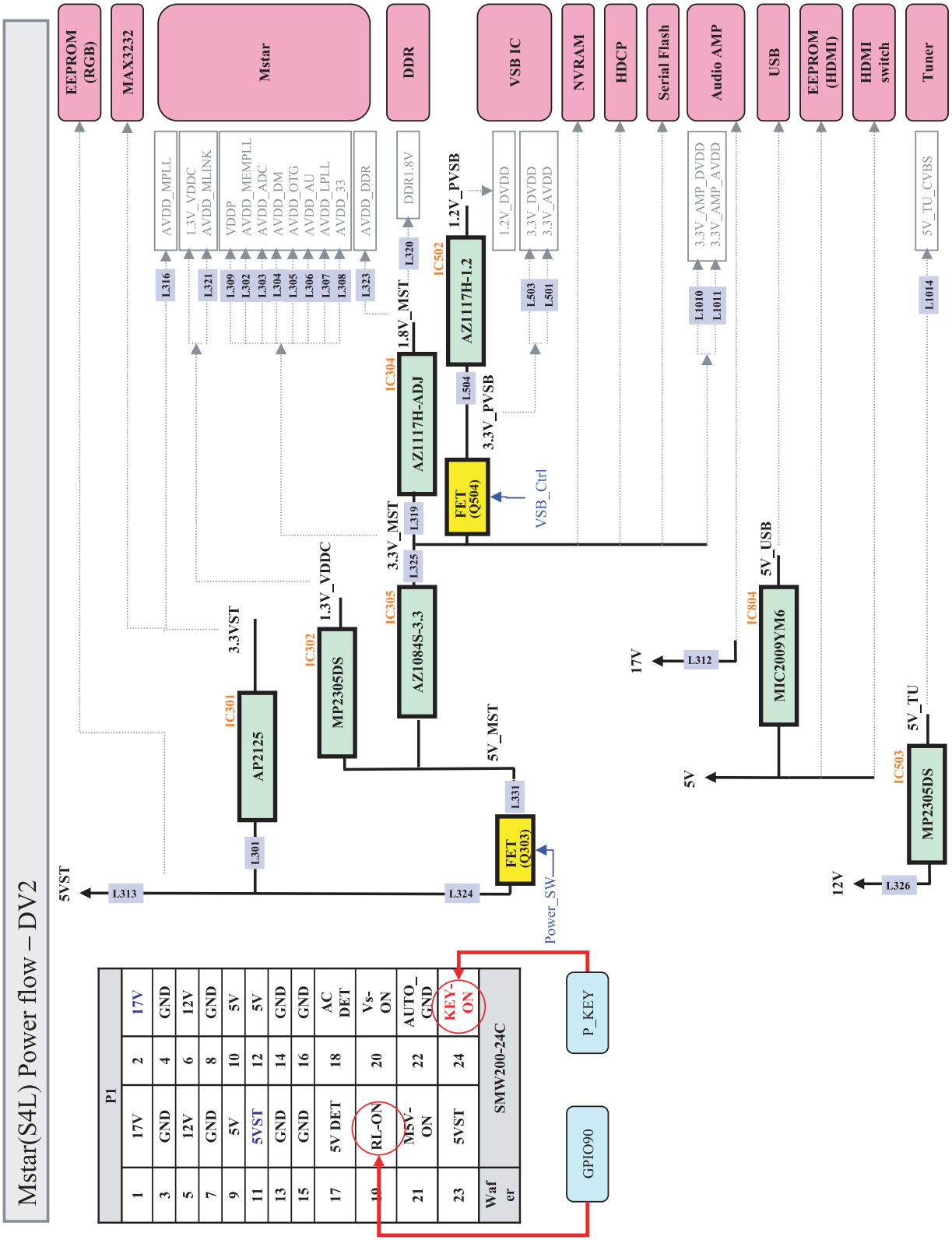

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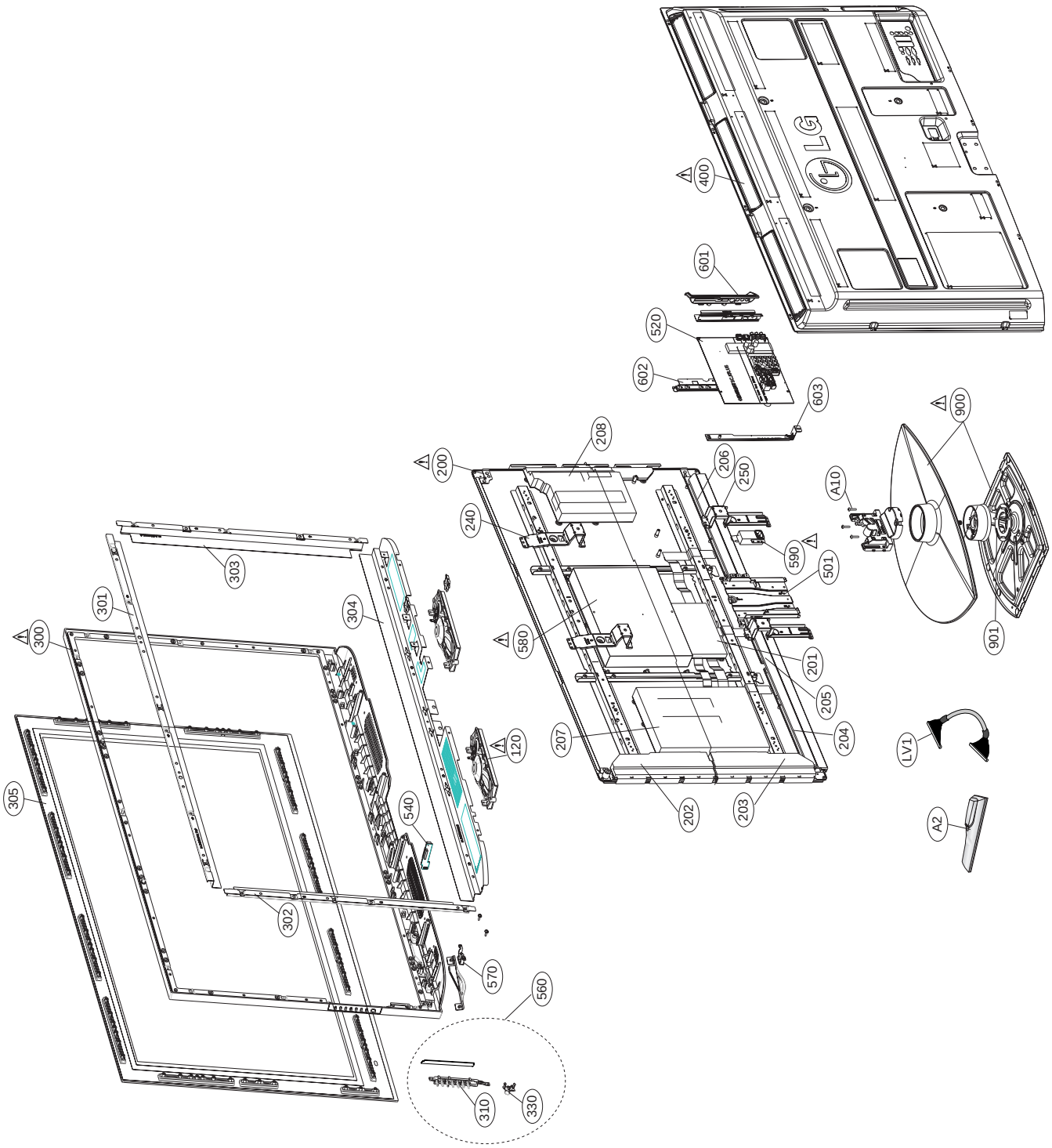
EXPLODED VIEW

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and EXPLODED VIEW.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.



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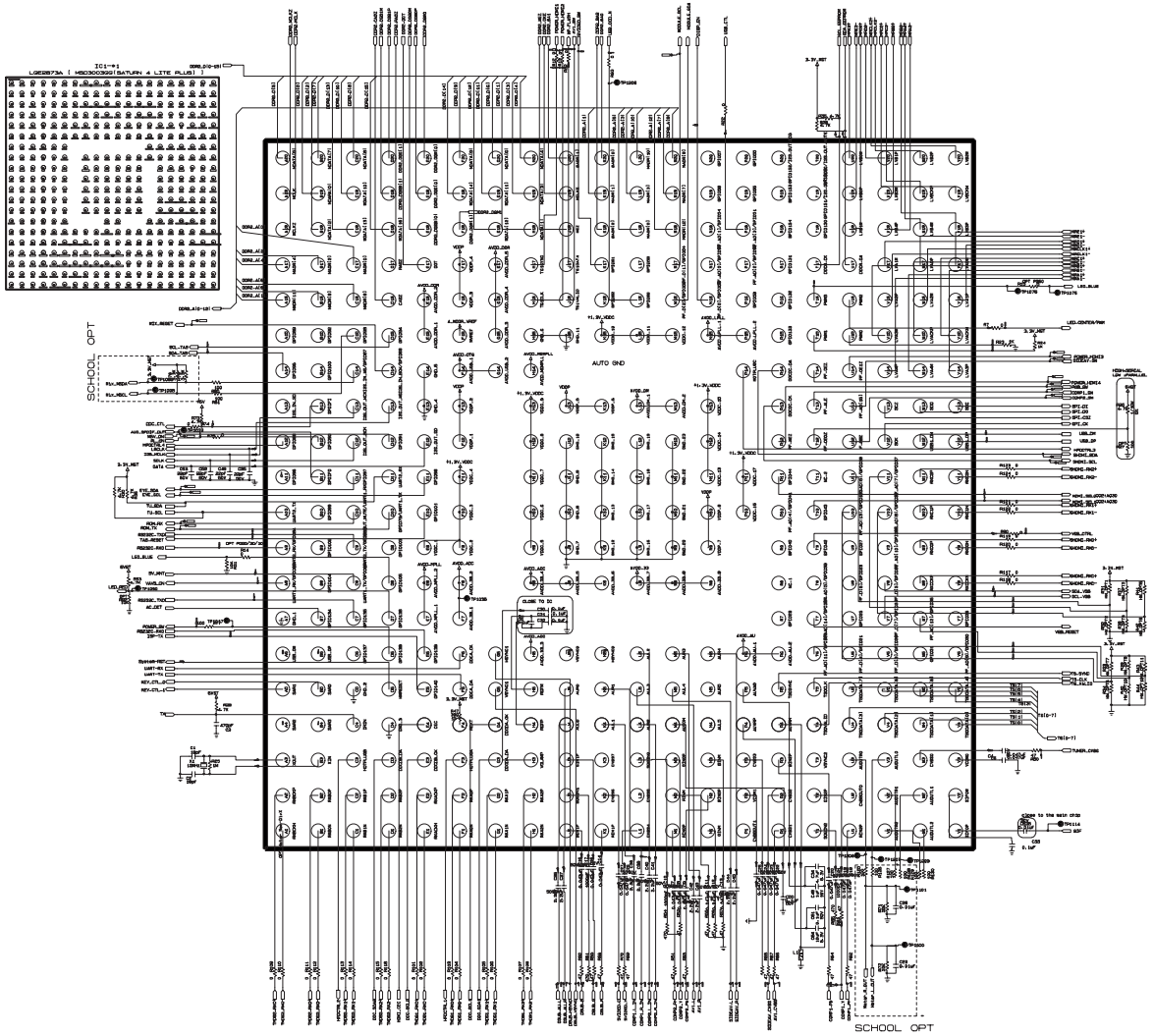
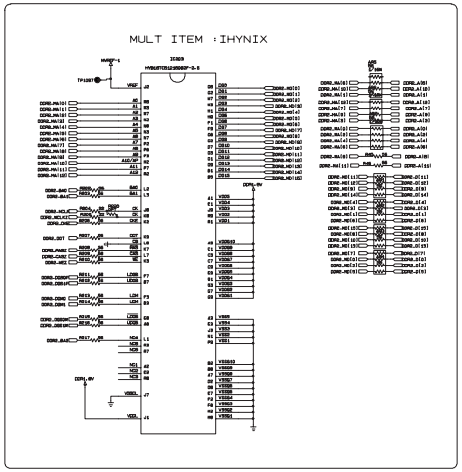
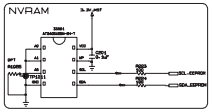
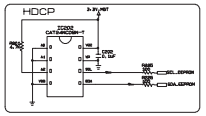
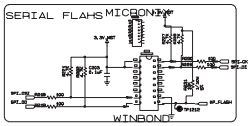
IC1
LGE2872A [MSD3003GG(SATURN 4 LITE)]











THE ⚠ SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFATURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE ⚠ SYMBOL MARK OF THE SCHEMETIC.

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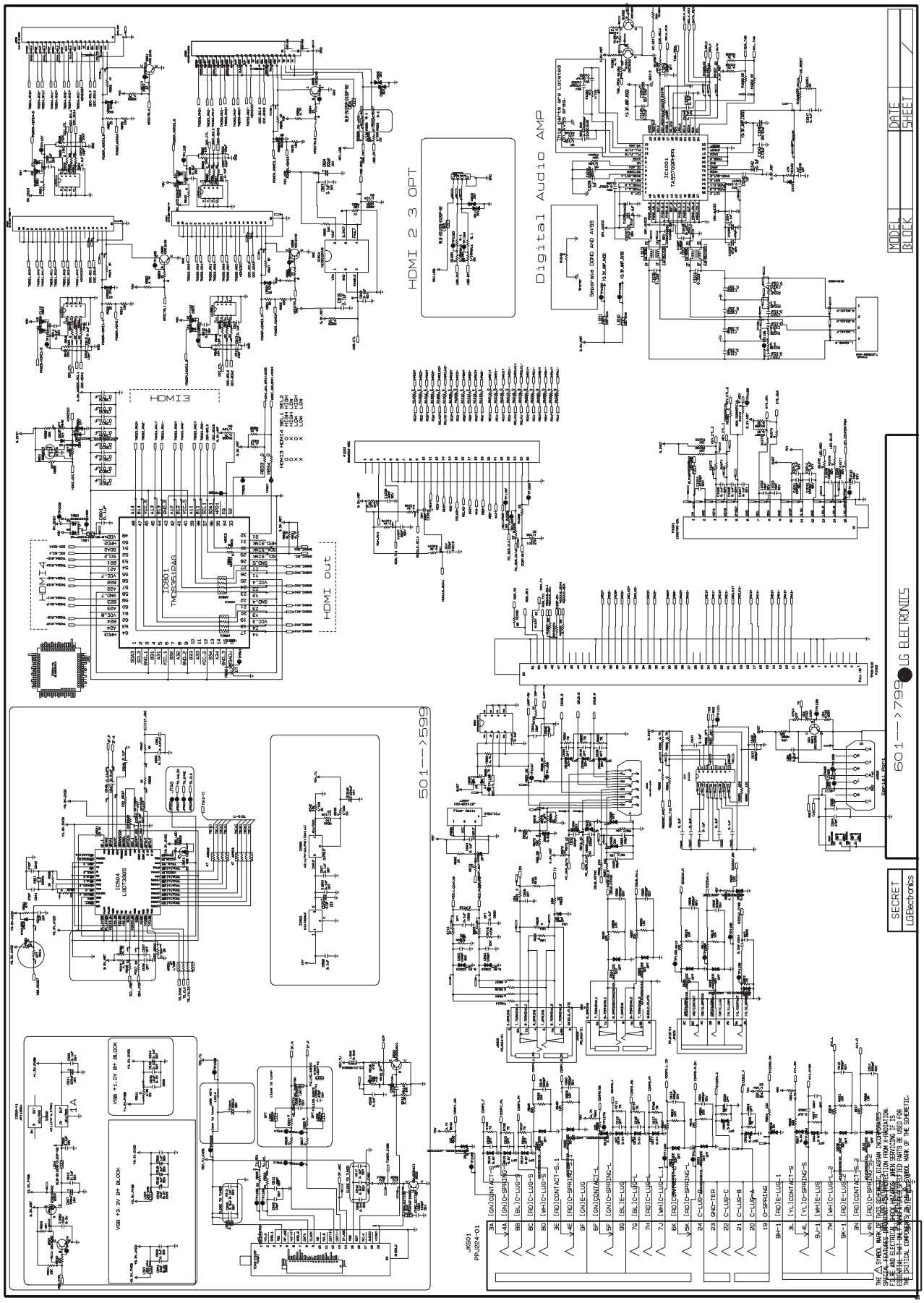
BLOCK		SHEET	



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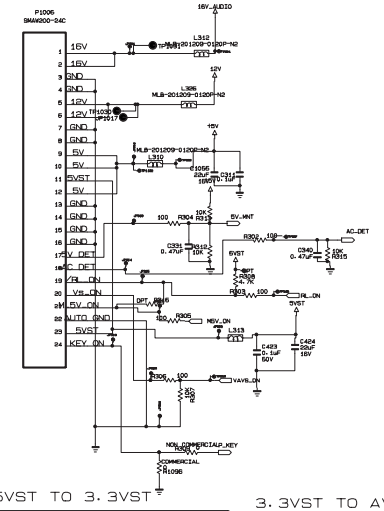
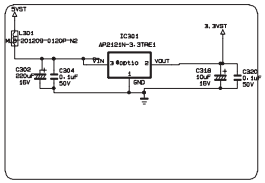
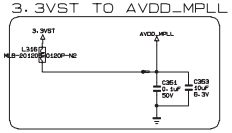


5VST TO 3.3VST



3.3VST TO AVDD_MPLL



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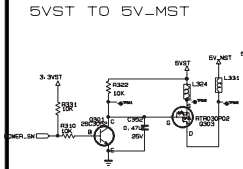
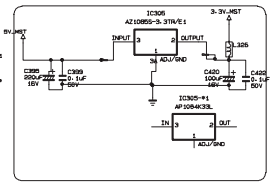
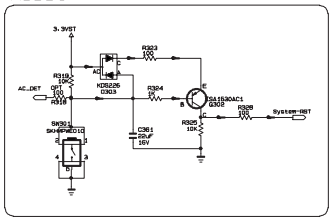


5V_MST 3.3V_MST



Reset



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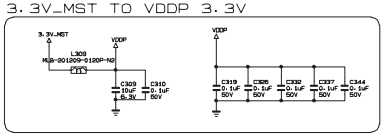
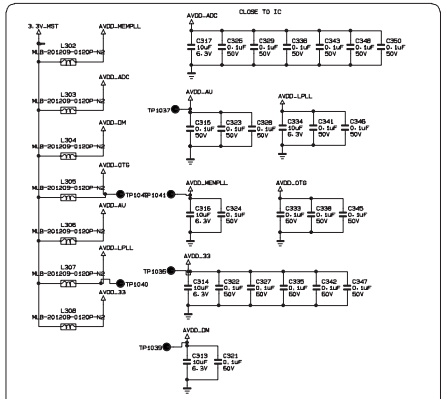
CLOSE TO IC

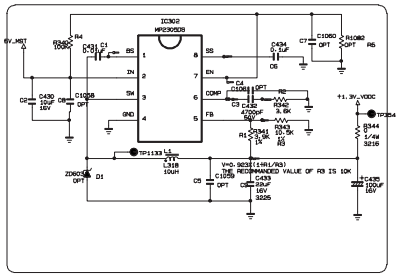
3.3V_MST TO VDDP 3.3V



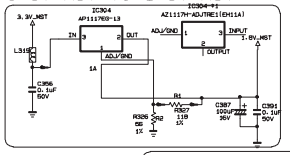
3.3V_MST TO AVDD 3.3V

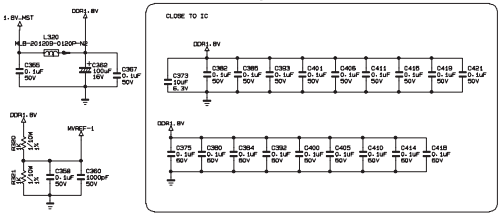


5V_MST TO +1.3V

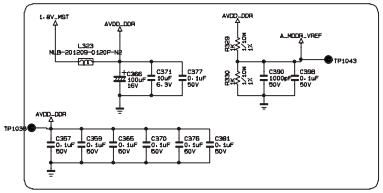


3.3V_MST TO 1.8V_MST



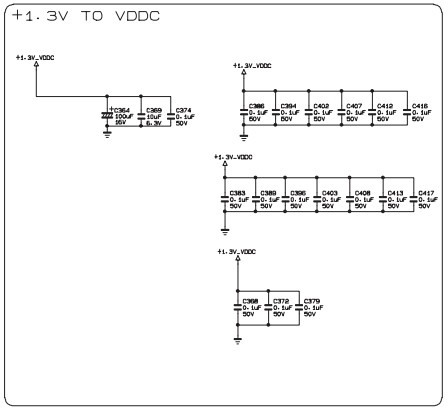


DDR2 Power



CLOSE TO IC

+1.3V TO VDDC



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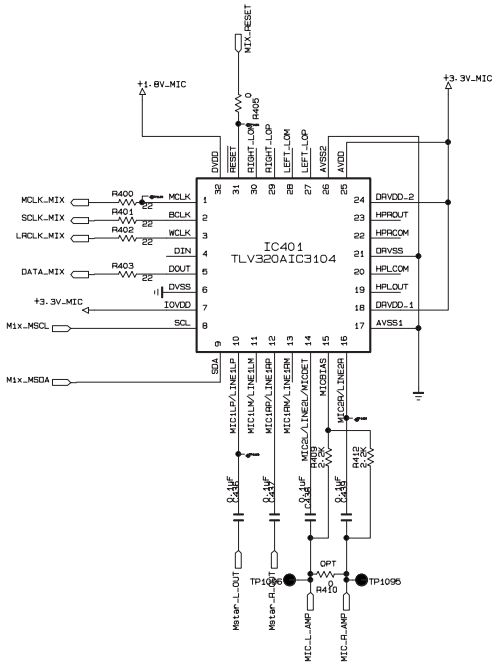
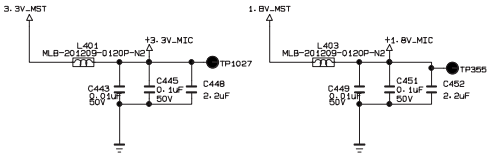
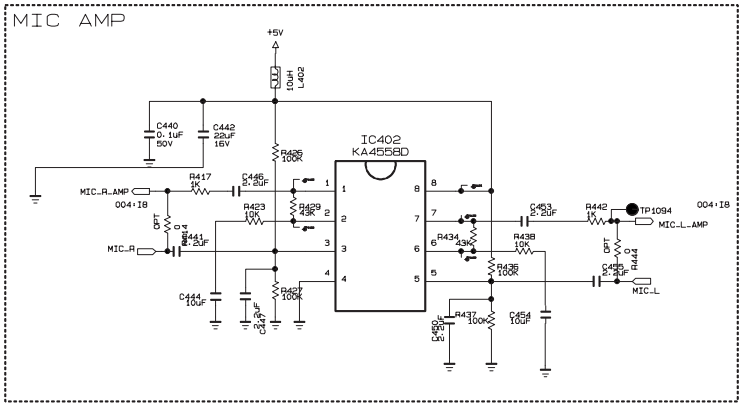
MIXER





MIC AMP



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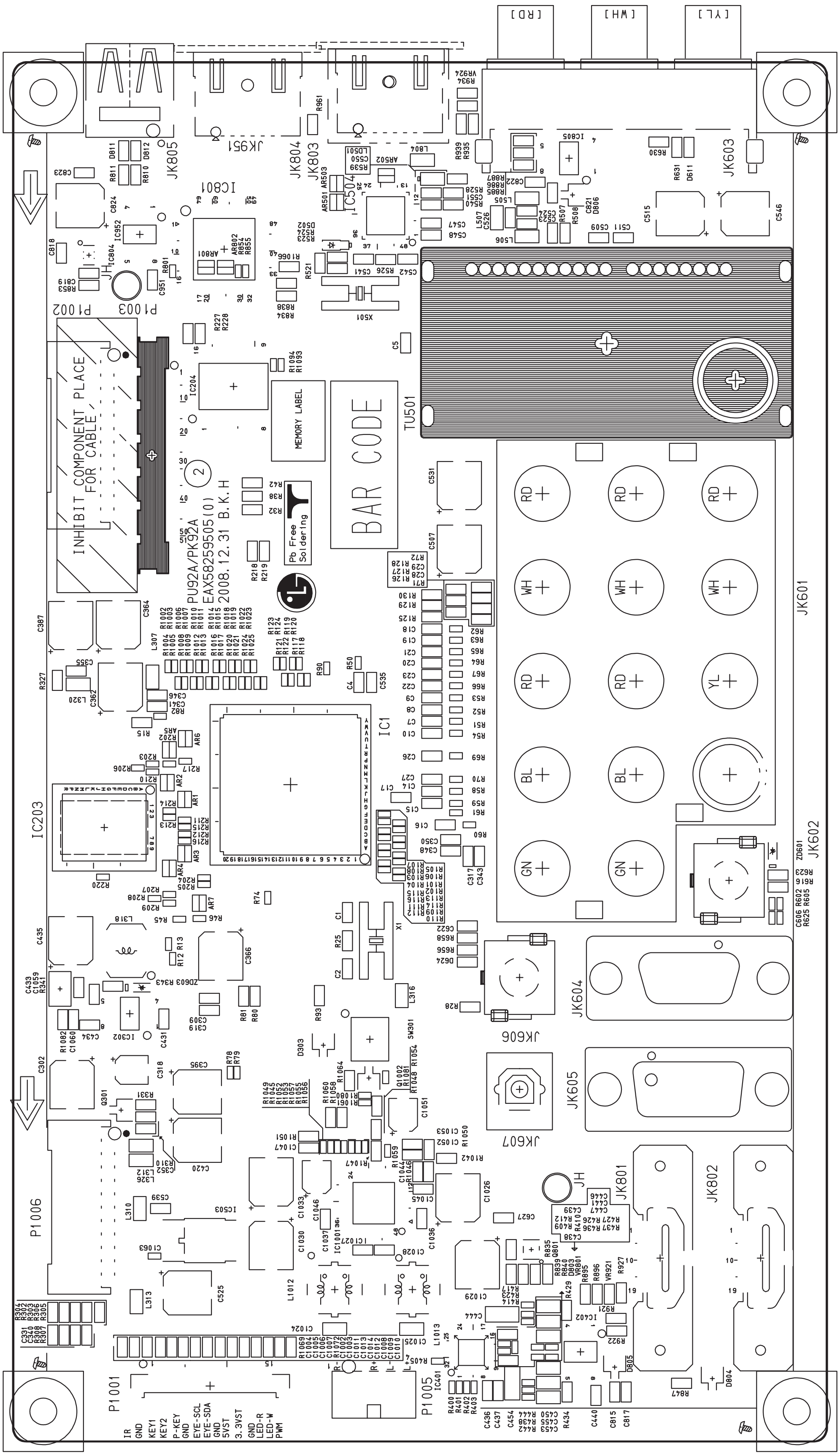
BLOCK		SHEET	/

MAIN(TOP)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MEMORY LABEL
BAR CODE
PU92A/PK92A
EAX58259505(0)
2008.12.31 B.K.H
Pb Free Soldering
IC1
IC203
JK601
JK602
JK604
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IC503
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P1005
IC401
IC402
X1
XS01
SW301
IR
GND
KEY1
KEY2
P-KEY
GND
EYE-SCL
EYE-SDA
GND
5VST
3.3VST
GND
LED-R
LED-W
PWM

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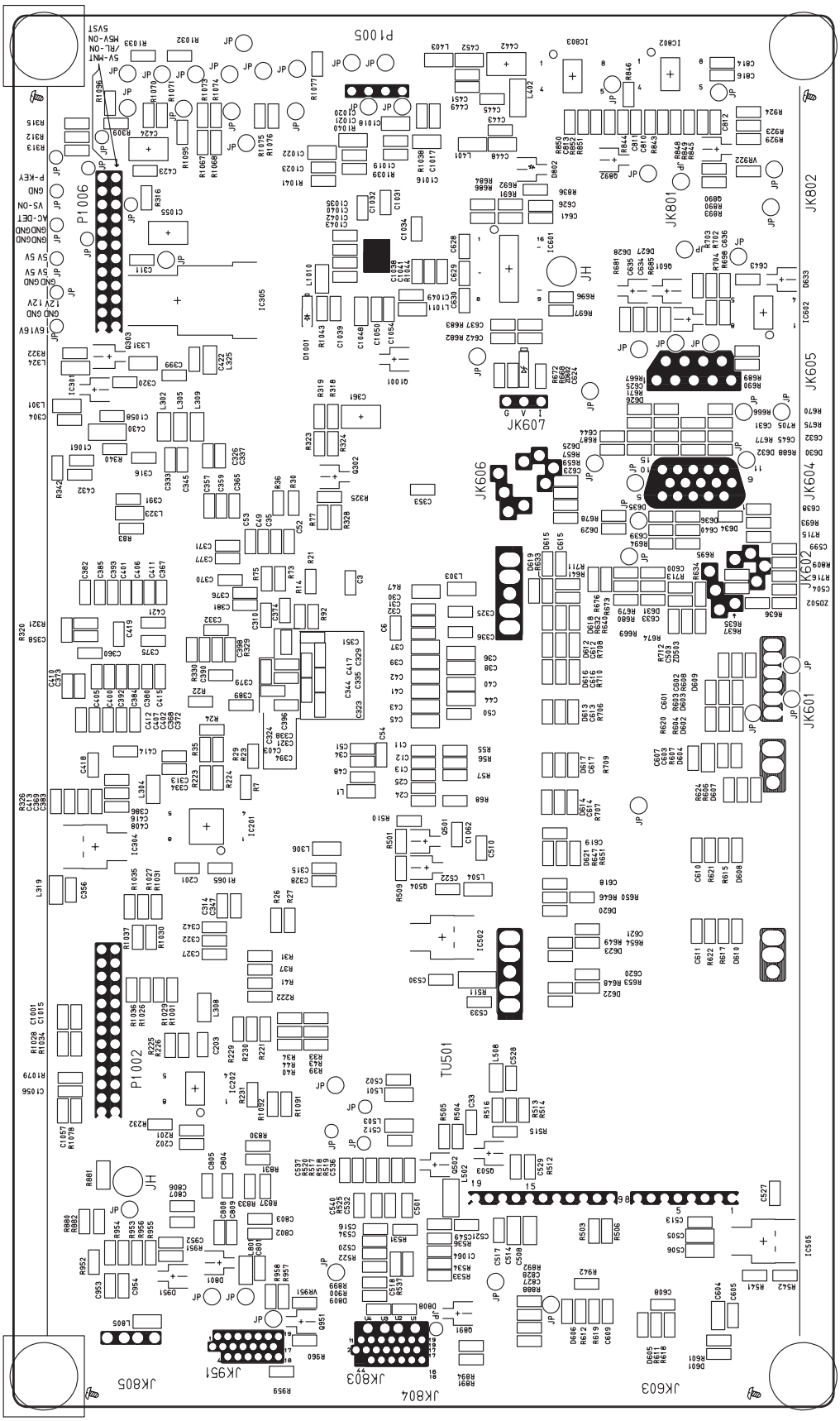
MAIN(BOTTOM)



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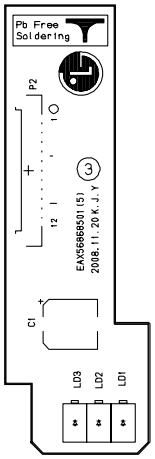
LED(TOP)



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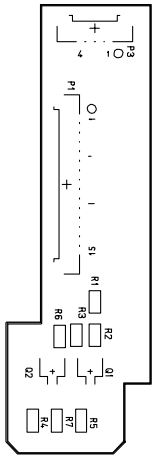
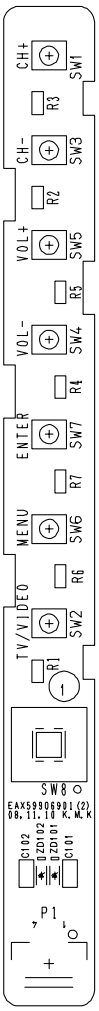


CONTROL(TOP)



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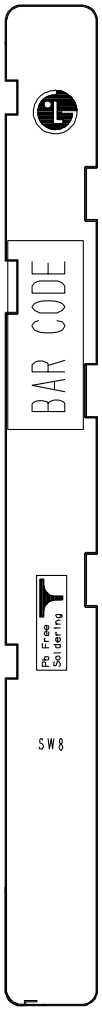

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